NEW-YORK FARMER,

AND AMERICAN GARDENER'S MAGAZINE.

VOL. VII.—No. II.] PUBLISHED MONTHLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS A-YEAR, IN ADVANCE. [NEW SERIES—VOL. II.

D. K. MINOR, Proprietor.] **FOR NOVEMBER, 1834.** [SAMUEL FLEET, Editor.

ORIGINAL COMMUNICATIONS.

Obstacles to the Collection of Information and Plants in and from Mexico. By H. Perrine, M. D. To S. Fleet, Editor N. Y. Farmer.

Consulate U. S. A., Campeche, 7th June, 1834.

Dear Sir,—I am just convalescing from a nearly fatal attack of inflammation and obstruction of the intestines, on the 26th ult., resulting from the corporeal exertion and mental agitation requisite to collect and transmit a considerable quantity of perennial plants and stingless bees to New Orleans. In my letter of the 1st of January, 1830, to the Secretary of the Treasury, I observed, that, "in promoting the objects of the Department, difficulties inconceivable, even among the scattered inhabitants of our western frontiers, must necessarily render the progress of an inquirer very slow." In relation to physical obstacles, I remarked, that, "for the protection of this country from foreign invasion, the principal reliance is placed on its briery and thorny underwood, swarming with ticks and mosquitoes." "But," I added, "the character of this people is more impenetrable than the covering of their soil. The Spanish jealousy of any foreign observer is augmented by Creole ignorance, and where despotic intolerance does not fetter him, affected friendship misleads him by false intelligence." How much time, labor, and expense, I absolutely wasted before I became thoroughly convinced that it was indispensably necessary for me to depend only on my own eyes and my own hands in the acquisition of intelligence or the collection of vegetables! How often did I falsely attribute to the want of roads and carriages the non-arrival at this port of plants that were never pulled, and of seeds that were never collected, in the interior! And how reluctantly have I at last become convinced that the most intelligent and apparently liberal personages of the country—men who acknowledge themselves indebted to me for their lives, and who would be ashamed to make any direct open opposition to my pursuits—have nevertheless deceived me by false promises every year since my arrival in 1827! Would you believe it possible, that notwithstanding my extensive popularity and intimate relations, I have never been able to obtain, through the hands of any individual, one single seed of the logwood tree!! The few that you saw in New-York, I myself personally collected, after offering a doubloon, ($16,) in vain for a single ounce, to the poorest Indians. The late Mr. Thibaud, of New-York, was walking with me in the outskirts of the capital of Tabasco, during May, 1831, when we arrived at the hut of an Indian family, whose members appeared grateful to me both for professional and personal charity. A logwood tree grew before the door, alongside of the gulley, called a creek during the rainy season. Wishing to exhibit to Mr. Thibaud the strangely jealous character of these people, I asked the father of the family if he wished to make me a slight return for the many favors conferred on him and his family. He eagerly replied, that he would show his gratitude in any way that pleased God. I then said, "Strip off a small bag of these pods containing the logwood seed, and accompany us with it to my house." He was so disconcerted at the request, that at first he knew not what to say, but, finally, approaching me, he whispered, "I will bring the bag of seeds to you after dark, at midnight." "Speak out," said I; "why not pluck and carry them immediately?" "Well, sir, I must confess I am afraid to be seen carrying any seeds or plants to you. Our big men have told us that you are robbing the country of all its valuable plants, and that if we don't take care, there will not remain a single stick of logwood in our swamps for us to cut and maintain our families." I turned round to Thibaud, and observed, "You perceive that they imagine the acquisition of a single seed or plant will give to me the power of Aladdin's ring or lamp, to carry off all their logwood swamps, mahogany forests, and caedo plantations, in the twinkling of an eye. That Indian will not bring me the seeds; and should his superiors ever offer me a single teaspoonful, I should be convinced, by that fact alone, that they were deprived of the vegetating properties by boiling, as was done with a small parcel carried to Havana."

I should have been greatly obliged to my Mexican friends had they told me at once, seven years ago, that they either could not or would not aid me; but, on the contrary, all the leading members of society, the civil officers of the town, and the wealthy planters of the country, very freely promised me to collect every thing I desired at its proper season of maturity. But that season never arrived. When they, or their servants, arrived, the seeds were not ripe enough to be collected, or had fallen from the trees, and been eaten up by animals, or carried away by the rains; or that, on account of the excessive dryness or wetness of the season, the fruits had not matured, &c., &c., &c., &c., &c., &c. As for the living plants, forty-nine out of fifty, that finally arrived in this city, are so mutilated, bruised, and dried or rotten, that they cannot be preserved even by my own personal care in transplanting them here. If I trust them to others, they are sure to perish. I could never obtain a living vanilla vine from Tabasco, until a year and a half ago, when I availed myself of the secret policy of making it a regular mercantile commission between two old resident foreign merchants, married with females of the country. The Campeche merchant ordered a box of cuttings of the Tabasco merchant, and I distributed one by one, at least thirty cuttings, to all the families who were noted for having a few plants of ornament or utility in their yards or gardens—but none exists at this day, except one under the care of the aforesaid merchant, and another under my immediate care, of which I sent one new cutting to Cape Florida, nearly a year since, and another to New Orleans, about 12 days ago. So with regard to the young pita plants of Tabasco and of Goazaevalcos. Of more than a hundred, there is now in Campeche but one under my care. One ought to be growing at Cape Florida, and five or six in New Orleans, or at least the three which I last sent under the personal inspection of an American passenger.

After having conquered every previous difficulty, even the task of carrying the plants from my own yard to the Mole, and thence aboard the vessel, is a severe trial both to my health and temper. My last remittance to New Orleans, in the Mexican schooner Francisca, consisted of upwards of 50 medium sized plants of the two cultivated varieties of the Sisal hemp; upwards of 200 leaves, or joints, of two varieties of the cochineal cactus; twenty hives of stingless bees; two full grown plants of the eatable pinuela or bromelia penguin; 100 joints of the delicious pitahaya, or strawberry pear, of a cactus triangularis; a number of joints of other pleasant fruited species of cactus, &c., besides 3 young pita plants, and a vanilla plant.

You are aware that since the cholera, a year ago, I have not enjoyed at any one time more than 10 or 12 days of health or strength sufficient to be in the street. Nevertheless, on the 26th ult., it was requisite that I should labor personally in the sun to prepare the plants, &c., in the yard—to walk along the carts which carried them to the Mole—and to see them safe in the canoes to carry them aboard—and to suffer the insults of the populace, who cursed me for robbing their plants, and the authorities for permitting me to collect and carry them away. The carmen and canoemen exacted double and treble prices—injured the plants as much as possible on the route—treated me with the most insolent conversation—and contrived it so, that when the cart arrived the canoe would not be there, and oblige me to pay them for carrying back the plants to my boarding-house near the gate, and thence back again to the Mole, when the canoe should be ready to carry them aboard.

Hence, you perceive, that in addition to paying exorbitant prices for each cart load, I was obliged to pay the same three times over for the same load, besides the trouble of unloading and reloading. If the load had been disembarked on the wharf, when the canoe was not there, I should have been

obliged to stay alongside of it the remainder of the day and all night, exposed to insults and violence, or left the plants to certain destruction. As a young Mr. Gookins, from New-Hampshire, had engaged his passage in the Mexican schooner Francisca, I was so extremely anxious to insure his protection of the plants from the hostility of the Mexican captain and crew during their passage, that I over-exerted myself both in body and mind to such a degree as to be in imminent danger of death during the night. As this amiable young man passed both the day and the night at my side, and the next day took from my feeble lips the directions relative to the distribution of the plants and bees, he will be able to give you the details of my sufferings during only twenty-four hours of the many years that I have passed in behalf of the domestication of tropical plants.

You will recollect the Sr. Leal, of Yucatan, to whom I gave you a letter of introduction, and to whose care I entrusted a large perspective view of this port and city, to be presented to our venerable President. Would you believe that he brought advices from a Spanish merchant in New-York, to the governor of this state, to beware of permitting my embarking any more hemp agaves, as the cultivation of them in Florida would be prejudicial to planters and state of Yucatan. That he did communicate that message, I have the authority of the vice-governor himself, who was present during his conversation with the governor. Mr. Leal I forgive, because he has since sent me some seeds of a species of cotton, which he affirms to be a climbing plant, cultivated in the interior of this peninsula; but the Spanish merchant of your city must be reminded that he has acted unworthily of the title of American citizen, which he bears, and of the prosperity which, under its protection, he enjoys, however characteristic of the degraded blood in his veins.

With the foregoing circumstances in view, you will see that it is impossible for any individual to obtain an entire cargo of living plants from Yucatan, unless aided by a vessel of war, expressly sent by the American government for that purpose. You know that the exportation of the cochineal insect is expressly prohibited by the Mexican government itself; and although there is no law which prohibits the exportation of a cargo of hemp agaves, or of the cochineal cactus, yet I have no doubt that any individual attempt would be effectually opposed both by the people and the authorities.

So extremely absurd is the ignorant jealousy of the people in general, that if a foreigner manifests a desire to collect the most worthless weed, they imagine it at the moment to be worth a mine of gold. The first reply to the most simple question about the most ordinary plant, is, "How much is it worth in your country?" And the more you endeavor to convince them that it has no pecuniary value, the more strongly they persuade themselves that it will afford a fortune to its possessor. Like the dog in the manger, however, they will neither eat themselves, nor permit others to eat. Having heard that the collectors of antiquities had acquired riches by their exhibitions in Europe, the Mexican Congress passed a law prohibiting their exportation; and hence the common people reason, that if old stones are so valuable, new weeds must be worth a great deal of money.

But, independently of every other consideration, their hereditary hostility to strangers, cherished by their own authorities, is sufficient to cause them to throw every obstacle into the way of all inquiring foreigners.

Of the despotism which the civil authorities exercise, even on their own countrymen, you may infer from the fact, that, about six weeks since, a gentleman was put in the carcel by a vulgar alcalde of the present year, for not having taken off his hat when passing at thirty yards distance in the street. The conduct of these authorities resembles that of negroes, when made overseers of their brother slaves. In the West India Islands, and in our Southern States, you will find that the slaves infinitely prefer a white to a black overseer, as the latter is much more overbearing and cruel in his treatment. The Greek tax-gatherer of his fellow Greeks, under the Turkish Government, and the Hindoo exciseman, among his fellow Hindoos, under the British Government, and all the authorities under the Spanish American Governments, are equally proofs of the despotism universally exercised by fellow slaves when invested with even temporary power over their brethren. I have repeatedly stated the fact, that so far is my office from affording respect or protection to my person, that I am indebted to my profession alone for my partial exemption from insult and outrage. But any foreigner who undertakes any pecuniary enterprize in this country, may rest assured that he will never be able to carry it into complete execution. If his property is not destroyed, and his person not imprisoned by the nearest barefooted alcalde, or despotic sub-delegate, the common council of the city will pass an especial ordinance to his injury; and if that be not sufficient to break up his establishment, the legislature of the state will decree an especial law against the branch of industry in which he is engaged. A Doctor Baldwin established a saw mill, moved by animal power, on the banks of the Goazacoaleos, and was beginning to reap the rewards of his capital and industry thus employed, when the legislature of Vera Cruz imposed a tax on the trees he cut, and on the boards he sawed, amounting to a prohibition; and after spending more money than he ever gained in ineffectual attempts to obtain justice, he abandoned the saw mill in despair. Hundreds of similar examples may be cited throughout the Mexican States.

But what can a foreigner expect when he sees the manner in which they treat even such of their own citizens as engage in any industry or enterprize likely to augment their own fortunes and the prosperity of the states in which they reside? The late P. Guzman of Merida was the most meritorious citizen of Yucatan, in our use of the epithet. He introduced the few important manufactures that existed in this peninsula, such as the tanning of hides, the making of soap, &c. He also projected the extraction of the coloring matter of logwood for exportation, which renders valuable the trees in the interior, too distant from the shore to pay the expenses of transportation. As the machinery for shipping the wood was costly, and the success of the extract in the foreign market still problematical, he begged and obtained, in 1828, an exclusive privilege of only five years from the legislature of this State. But as soon as he got the manufactory into complete operation at a great expense, in 1829, the same legislature repealed the law, alleging that the use of machinery was prejudicial to the poor carriers of logwood to the shore!!

Very respectfully,
H. PERRINE.

Since the above was in type, we have received the following communications also from H. PERRINE, Esq., U. S. Consul at Campeche.—[ED. N. Y. F.]

Tropical Growth of the Vine and the Fig.

August 20, 1834.

MR. FLEET,—I am writing from the second story of a house where the windows are all doors, and am looking at the green covering of a frame which impedes the view of the yard below. Three months ago two slips of the *ever-bearing vine* had just began to throw out single branches, which have now extended over the whole surface of a rustic frame, and afford a grateful protection from the perpendicular rays of a tropical sun.

The parent vine, from which the slips were taken, yields an abundant crop, both at the beginning and end of the rainy season, besides occasional clusters of grapes during every month of the year; and with very little intelligence or industry, might be made to produce numerous bunches during every day of its existence.

But the growth of the fig between the tropics is a still more astonishing evidence of the fertilizing powers of an intertropical sun.

The plant commences bearing at 12 inches from the ground, and continues during every hour of the year. Now, I wish to call your attention particularly to the manner of propagation, with the hope that it may be applied to all kinds of fruit trees, to obtain fruit in the shortest possible time. *The branch to be propagated is* SIMPLY BENT INTO THE EARTH, *and thus maintained by a forked stick, or by a stone.* It is not broken, nor half cut through on the side next the trunk, nor ringed, nor maimed, nor mutilated in any way, as in the northern method of propagating by layers; although in flower or fruit, the operation is still successful, and by the time that the interred portion has shot forth sufficient roots to admit of its separation from the main branch or trunk, the external part is covered with ripe fruit!

When the branch to be transferred in blossom or fruit is distant from the ground, any vessel containing earth, as a gourd shell, or a turtle shell, is elevated to the level of the branch, by a box, stool, or large stone, and the centre of the branch being bent into the earth of the vessel, is maintained beneath the surface by a fork or weight as before stated. Having attended on the favorite child of a family, a few weeks since, the mother has recently shown me a flower pot with a branch of figs thus growing, which she assures me will soon be separated and brought to my residence with ripe fruits, although the plant itself may not be a foot high! You know the manner in which these fleshy calyces grow—a fruit for every leaf alternately ascending the stem, at a half to one and a half inches apart. And yet, with all these favors of nature, would you believe that figs sell here at two for sixpence, when the least industry or care might render them as plenty as blackberries?

Agricultural Philanthropy.

August 25, 1834.

All philosophical philanthropists, who are seeking so to improve the condition of human society that the poorest laborer may enjoy all the physical comforts of life by working one half of his time, and all the mental pleasures of education in the remainder, have undertaken an enterprize which can never be successful in climates laboring under the curse of cold, unless the productive vegetable of the torrid zone can be acclimated in the wintry regions of the north. Hence their philanthropy should be more rationally and chiefly directed to the introduction of other tropical alimentary plants still more valuable than the common potatoe; or to the colonization of the poor of the variable zone in the highly productive regions of tropical climates. Or a medium may be taken, and the poor population of cold climates may meet the productive plants of hot climates half way between both, in the happy position of our southern States.

At all events, the views of these philanthropists will be promoted by every agricultural improvement which cheapens the means of subsistence. Among these stand highest the cultivation of plants which are naturally very productive in the most barren soils. Hence the cassave root is preferable to the common and sweet potatoe in climates where each will grow. Hence the sugar palm is preferable to the sugar cane: the latter requiring the richest and deepest vegetable mould, the former being contented with the poorest and scantiest sandy soil. Hence, too, the palm sugar is the great article of consumption among the poor people of the poor countries of the East Indies, being produced with the least capital, and at the least price; so that the same quality of sugar from the palm sells at half the price of the sugar from the cane. And hence, also, the pine woods of Georgia may become more profitable sugar fields than the black alluvion plains of Louisiana. But why pursue the subject, when it is a self-evident truth that the great object of agriculture, like that of every other object of human industry, is to obtain the greatest value with the least capital, or greatest produce with the least toil.

Vegecultural Economy.

August 28, 1834.

Recollect that these Indians have neither a plough, nor a spade, nor a shovel, nor a hoe, nor a harrow, nor a rake, nor, in short, any instrument whatever, save that same universal machete, or short sword, with which they cut down the woods to till the ground after clearing it by burning. From this same unploughed field, yet abounding with roots of the forest, they extract the essential crops of indian corn and cassave roots, with the auxiliary crops of bean seeds and bean roots, the fruits of muskmelons, watermelons, pumpkins, squash, and cucumber vines, with the roots of the creeping sweet potatoe and yam. Of the bean vines, some climb up the stalks of the corn, while others intermingle with the vines of the Cucurbitaceæ. The first crop of all being thus obtained, without weeds, a second crop is obtained from the same surface; but while it is yet growing, the suckers of the Plantain or Banana are interplanted in the only vacant spaces remaining, so that by the time the second crop of all the foregoing fruits is collected, the Banana plants are already half grown, and thenceforward good-bye to the fear of famine, and to nine tenths of the little labor employed on the previous vegetables. They have now indisputably arrived to the enjoyment of the greatest alimentary blessing ever bestowed by God upon man. When the great long glossy green leaves of the Musas meet each other in verdant arches at ten or fifteen feet from the ground, they form shady arcades or refreshing walks, not penetrated by the midday rays of a tropical sun, nor obstructed by the troublesome growth of spontaneous weeds. From this verdant roof at every step are suspended racemes of golden fruits, somewhat resembling cucumbers in shape, from six to twelve inches in length, from sixty to one hundred and eighty in number, and from thirty to ninety pounds in aggregate weight. As from the same root proceed several shoots of different heights, like several stalks of corn in one hill from seed sown at distant intervals, although the first bunch of Plantains is not mature until ten or eleven months, three or four bunches more will be obtained every succeeding year from the successive offspring of the same original root; and hence also, the different bunches arrive at maturity at all hours of every day of the year! Here then is the prince of all plants for the nourishment of men. Happily indeed has the genus been named Musa, and, more happily still, one of the species christened M. paradisiaca; and quite naturally has it successively been supposed the forbidden fruit of Eden; the fig tree of the same garden; and the grapes brought by the spies of Moses out of the promised land. It furnishes, beyond doubt, the most useful and productive fruit in the world. It is a much better bread and fruit than the bread-fruit itself, and yields on the same surface with less labor three times as much nourishment in as many months as the tree requires of years. At a very moderate estimate of the relative weight of plantains, potatoes, and wheat, on the same surface the numbers are as 133 to 4 and to 1. By the same moderate calculation of the production of plantains and wheat for nourishment, it is found that, with a liberal allowance for the latter, the same space of ground cultivated of the former will nourish twenty-five times as many men, while the labor to obtain plantains for food is not one tenth of that requisite to procure wheat bread.

Recollect that the plantains and bananas are brother species, like the apple and the pear; that from the end of the first year of the plantain field, they furnish *hourly*, fruit, food and medicine, without any intervening labor or preparation but simply plucking. One has not the labor of digging them like potatoes, of shelling them like corn, of cutting, thrashing, or grinding them like wheat, or of replanting and harvesting annually like all. They can be eaten out of the hand, uncooked, like the pear, and dried like the fig; or cooked by boiling, roasting, baking, frying, and stewing, like potatoes, (with much less trouble in peeling them,) and then, if desired, they may be served up on the grand glossy leaves of their parent plants. Of the unripe fruit you may extract flour, to be eaten like wheaten bread. Of the ripe fruit, sugar can probably be more profitably extracted than from the sugar cane. From them, also, may be cheaply formed a fine fermented marmalade, superior to cider or champaigne, and excellent ardent spirits can, of course, be abundantly obtained from the same materials. The various forms of conserves, of pastry, &c. into which these delicious fruits can be transformed by refined cookery will readily occur to the mind of every epicure. But why dilate on a subject so well known to every reader on tropical fruits, yet which cannot be entirely appreciated in all its details, except by a resident of the favored regions in which they grow? You will anticipate my answer, "under the name of banana, a great number of plants which differ essentially in the form of their fruits, and which, perhaps, constitute true species, are cultivated in the equinoctial regions, and even to the parallel of 33 or 34 degrees." In the valley of Caraccas, at 2,952 feet of elevation, the Arton, or M. paradisiaca, does not grow on account of the *coolness* of the temperature; but the *Dominico*, or M. regia, and the *Camburi*, or M. sapientium, these flourish; and the latter, called also the Guinea plantain, or banana, as it grows well in the Canary Islands, and on the coasts of Barbary, and of Malaga, may be soon acclimated in the United States as far north at least as the coasts of Virginia. The sooner this enterprize is commenced the better. I am disposed to believe that this species of the Musa might be at once transplanted from the Canaries, or Spain, to the sea islands of Georgia, without passing the intermediate acclimation of a year or two in tropical Florida. At any rate, let some of the wealthy owners of hothouses at the north send out a single plant to Augusta, or St. Augustine, with the well founded hope that a single vegetable, which has hitherto merely served to gratify the curiosity of a limited number of acquaintance, may become the parent of thousands of most useful plants for the subsistence of an unlimited number of his countrymen.

Descriptive List of Geraniums at the Linnæan Botanic Garden, Flushing. By D. [For the New-York Farmer and American Gardener's Magazine.]

Flushing, Sept. 25, 1834.

S. Fleet, Esq.

Dear Sir,—Our mutual friend, Mr. D., who is now in Mexico, amused himself, during his sojourn here, by making short notes descriptive of such varieties of geraniums as were then in perfect bloom, and we have thought we could not make a better use of them than by sending to you for publication.

Yours, respectfully,

Wm. Prince & Sons.

CATALOGUE OF GERANIACEÆ.

The size of the flowers have been designated as follows, viz.: *small*, when less than an inch diameter. When *no* remark relative to size is made, they are to be understood as varying from one to one and a half inch. *Large*, when from one and a half to two and a half inches. *Very large*, when two and a half inches or more in diameter. I have found so much difficulty in designating the colors, that I have been tempted to give over that task as hopeless. The tints are so variable, so rich, so radiant, that the eye in a short time becomes dazzled. This must account for the appearance of repetition, though the sorts described are all essentially different.

Blucher, superb scarlet, Pelargonium zonale var.

Great flowering, Grandiflorum. A fine old kind, large flowers, pure white, marked with reddish purple streaks.

Jagged petaled, very curious, Schizopetalum.

Ivy leaved, purple flowers, Peltatum.
Do. do. white do. Album.
Do. do. striped leaved, Lateripes, fol. variety.

Magnificent, Magnificens; flowers large, fine rose color, streaked with purple, beautiful.

August or Noble, Augustum; color pale blush, marked with rich purple spots and streaks, beautiful.

Princess Charlotte's, Princeps; flower small, dark lilac, upper petals marked with a dark velvety spot and purple lines, pretty.

Burnished or Glowing, Ardens; flowers small, color a glowing scarlet, with dark, almost black, shades, very fine.

Sad Flowered, Night Smelling, Triste; deliciously fragrant in the evening.

Cleopatra, Cleopatræ; fine rose colored, upper petals marked with deep purple and black.

Rowena, Rowenæ; flowers large, upper petals fine rose color, with dark purple and white streaks, lower do. pale rose, beautiful.

Royal George, Regalis; large, color lilac, streaked with deep purple and white, beautiful.

Exalted, Excelsum; large, fine pale rose color, pencilled with purple, very fine.

Betony Leaved, Betonicum; upper petals delicate rose color, streaked and blotched with purple, lower do. almost white, pretty.

Chandler's Royal Purple, Chandlerii; flowers fine royal purple color, delicately streaked, very pretty sort.

Fulgent Celandine Leaved, Fulgidum; a "fine species, whose brilliancy of color cannot be imitated." [Sweet. Geran. 69.] Flowers small.

Fiery Flowered, Ignescens; color very brilliant.

Dissolvible Colored, Solubile, sweet—the old Duchess of Gloucester of some—upper petals deep rose color, with a very dark spot in the centre, and black streaks, lower do. lighter rose, a very fine sort.

Large Flowered, Macranthon; very different from 1851,(?) flowers very large, pure white, upper petals marked with a very rich purple spot and purple lines, superb kind, flowers here measured three inches diameter.

Quaterman's Monstrous, Quatermani; flowers very large, pale rose color, pencilled with rich purple, very fine.

La Fayette, Superbum; flowers very large, color [illegible]d, marked with purple lines, very fine.

Crenulate Leaved, Crenulatum; flowers large, color deep lilac, upper petals blotched with dark purple, streaked with white and black, fine.

Lady Hussey's, Husseyanum; color fine purple, upper petals marked with dark blotches and lines, fine.

Prominent Nerved, Nervosum; upper petals reddish rose color, with a very dark spot, streaked with black, lower do. rose color, streaked.

Close leaved, Coaretatum, Lavallette's; upper petals reddish purple, marked with black, lower do. much lighter, pretty.

Blush Colored, Countess of Liverpool's, Rubescens; flowers large, rose colored, beautiful.

Robinson's, Robinsoni; flowers large, color light rose, upper petals marked with a purple spot and very dark streaks, beautiful.

Davey's, Daveyanum; upper petals dark scarlet, velvetty, marked with a very dark spot, and netted and veined with black, lower petals much lighter, superb.

Many Nerved, Multinervus; upper petals fine purple, with a dark spot in the centre, lower do. rose colored, pretty.

Select, Eximium; upper petals fine rose color, marked with a very dark spot, veined with black, lower do. pale rose color, beautiful.

Breesis, Breesianum; upper petals bright rose color, with a deeper spot in the centre, and purple streaks, lower do. fine rose color, very pretty.

Yellow Flowered Hoarea, Hoarea radicata, Geranium ciliatum; a tuberous rooted, stemless plant, with yellowish flowers, marked with fine red spots, pretty.

Dark Crimson Flowered Hoarea, Atrosanguinea; root tuberous, leaves pinnate, flowers in umbels, numerous, brilliant, dark crimson, an elegant plant.

Italian Tuberous Geranium, Geranium tuberosum; very handsome plant, with purple flowers.

Reuben Apsley, Apsleyanum; fine dark red, upper petals beautifully pencilled with black lines, lower do. lighter color, beautiful.

Comely, Decorum; small, color scarlet, with a very dark velvetty spot and black lines, lower petals lighter, streaked with red, very pretty.

Rose Petalled, Rhodopetalon; upper petals fine rose color, streaked with purple, lower do. light rose, fine.

Duke of Northumberland, Northumbrianum; very deep scarlet, velvetty, pencilled with fine black lines, very rich.

Lady Clarkson's, Clarksonianum; flowers large, upper petals purplish rose color, marked with dark purple and some white lines, lower petals pale rose, fine.

Coronation, Coronaudum; flowers very large, pure white, with rich purple blotches and streaks, very fine.

Radiant, Radians; color bright scarlet, upper petals pencilled with black, very appropriately named.

Navarino, Navarino; flowers large, color pale blush, upper petals marked with a deep purple spot and streaks.

Brudenella, Brudenella; fine scarlet, with very dark streaks, fine.

Mirror, Speculum; flowers large, upper petals fine rose, with a dark spot, marked with dark purple and white lines, lower petals pale rose, very fine.

Brillante, Micans; fine bright velvetty scarlet, marked with fine black lines, name very apposite.

Tricolor Geranium, Campylia tricolor, Geranium tricolor; beautiful, comprising three distinct colors, very rare.

Russell's Champion, Pelargonium; variety large, upper petals fine rose color, with a large and very dark spot, streaked with black and white, lower do. pale pink, with rose colored streaks, fine.

Daniel O'Connell, O'Connellianum; this superb plant was grown from seed, by Donnelean, of Montreal, L. C.; flowers deep velvetty scarlet, of a very rich appearance, upper petals marked with a black velvet spot, and pencilled with black lines, lower petals rather lighter.

Great Commander, Imperator maximus; flowers very large, upper petals rich deep rose color, marked with a very dark velvetty blotch, purple and white streaks, lower petals very pale pink, superb.

St. Anna, Sancta Anna; flowers large, white, blotched with purple, grown at Montreal, L. C.

Beau Claudius, Beau Claudianum; upper petals light rose color, with purple streaks, lower do. very pale.

Alexander the Great, Alexander magnus; flowers very large, upper petals very deep rose color, marked with very dark velvetty blotches, streaked with black and white, lower petals fine rose color, superb.

Charles Tenth, Borbonides; flowers very large, pure snow white, upper petals beautifully marked with fine rich purple, very fine.

Prince Leopold, Leopoldi; large, white, marked with purple, very fine.

Admiral Codrington, Codringtonianum; very beautiful.

Charlwood, Charlwoodii; upper petals very dark crimson, of an indescribably rich velvetty appearance, netted and veined with black, lower petals scarlet, superb.

De Vere, Vereanum; flowers large, color deep rose, upper petals marked with a very dark velvetty spot, streaked black and white, lower petals streaked with light purple, very fine.

Daphne, Daphne; color delicate rose, upper petals marked wtth a dark velvetty spot, and beautifully pencilled, lower petals delicate flesh color, very pretty.

Copley's, Copliæ; bright scarlet, upper petals darker, with a fine dark velvetty spot, streaked with black and white, lower petals tinted with rose, beautiful.

Man of Ross, Benevolum; large, upper petals rose colored, with a dark spot streaked with black, lower do. pale blush, streaked with rose, very fine.

Devonia, Devonia, Dissimile of Dennis; deep rose color, spotted and streaked with purple, very handsome.

Queen of Scots, Scotorum Regina; flowers very large, upper petals deep rich velvetty rose color, marked with a very dark purple spot, streaked with black and white, lower petals fine rose color, a most superb sort.

Magnum Bonum, Magnum Bonum; large, upper petals dark purplish red, streaked with black and white, lower do. deep rose, beautiful.

Russell's, Russellianum; bright scarlet, upper petals streaked with black, lower do. a shade lighter, beautiful.

Countess of Liverpool's, Rubescens; flowers large, rose colored, beautiful.

White Marked, Albinotatum; color light purple, upper petals streaked with black and white.

Duchess of Bedford, Bedfordianum; bright scarlet, velvetty, upper petals marked with a dark velvetty spot, and pencilled with jet black lines, very brilliant.

Urban, Urbanum; upper petals fine rose, streaked with purple and white, lower petals pale blush.

Calamistratum, Calamistratum; petals narrow, color rich purple, upper petals marked with a very dark crimson spot, below which are streaks of clear jet black and white, superb.

D.

Note. — A descriptive list of the residue will be furnished for a future number.

Turkish Preparation of the Tomato. By D.

To the Editor of the New-York Farmer.

SIR,—In one of your late numbers, I observed a notice of the Tomato, by one who appears to appreciate that vegetable at its just value. Without, however, agreeing with your correspondent in all its claims to excellence as an important article of the Materia Medica, I conceive we have nothing to equal it in giving pungency and flavor to our commonest dishes. It is a great desideratum to have it at all seasons of the year; and some of your readers will doubtless feel obliged by learning how to obtain it in a simple, easy, and economical manner. In Turkey, it is a universal favorite, and enters into the composition of all their sauces. I frequently saw it made, and the following recipe may be depended on, as it was corrected under the eyes of the good housewife herself.

The tomatoes are first washed in a weak brine, and hung up in a cool place to drain, until the following day; then squeeze them thoroughly by hand, throwing away the skins. The pulpy mass is strained through a fine cloth to prevent the seeds from passing through. It is then salted; put into shallow earthen plates, or dishes, and exposed to the sun for 12 days, or until it becomes a thick paste. It should be stirred with a wooden spoon, twice a day, while exposed to the sun. It is then fit for use. With respect to the quantity of salt to be added to the paste, the rule is, to put a hand-full and a half to the pulp of a hundred tomatoes, if large, and less, if smaller.

Those who prepare tomatoes in this way will be surprised at the small quantity obtained, but their surprise will cease when

they learn how far it will go. A bit not larger than a Lima bean will be sufficient to flavor the soup of a family of 20 persons; and a much smaller quantity for sauces. A small pot which I brought with me, containing about half a pint, lasted my family more than a year, and we used it very freely.

By stirring it frequently, fresh portions are exposed to the sun, and the salt is more thoroughly incorporated with it. The rule of 12 days holds good at Constantinople, and I should think would be sufficient here. At any rate, it should be thoroughly dried, (covering it over at night,) until it becomes of the consistence of hard butter.

I have planted a large quantity of tomatoes, and shall make the sauce according to the above recipe. Should an opportunity present, I will forward a small specimen, in order that you may knowingly recommend it to your readers.

Yours, truly, D.

Locusts, near Oyster Bay, Sept. 11, 1834.

REMARKS.—The above did not come to hand until Oct. 8. We should be pleased to have a specimen; and D. would confer a favor to us, and benefit the public, by giving in the Farmer the results of his extensive observation and of his present practice.

Experiments on Potatoes. By M. MOORE, Jr.

To the Editor of the New-York Farmer and American Gardener's Magazine.

SIR,—The following is the result of an experiment tried by me the past season, and thinking it might interest some of the readers of your Journal, have made the memorandum annexed.

I planted, last spring, potatoes of the same kind, on the same ground, all manures exactly alike, eleven different ways, and the result was as in the following table, viz.:

		Product.	
	No. of potatoes	lbs.	oz.
No. 1, Planted a single eye, ...	9	3	14
" 2, " two eyes,.....	14	5	2
" 3, " three eyes,.....	14	5	15
" 4, " two sets of 2 eyes each,	15	5	
" 5, " do. 3 do.	25	5	
" 6, " do. 4 do.	34	5	10
" 7, " three sets of 2 eyes each,	24	3	2
" 8, " do. 3 do.	27	4	
" 9, " do. 4 do.	24	4	10
" 10, " do. 5 do.	32	5	3
" 11, " whole potatoe, with 11 eyes, ...	21	4	12

The size of the potatoes in No. 1 were as nearly of the same size as could well be; in No. 2, were good size, even; No. 3 were some very large, and others smaller; No. 4 were mostly of an even size; but all below were a great number of very small size. A farmer living near me had planted this spring an acre, and used 50 bushels of seed.

I endeavored to procure in New-York last fall, all the varieties of early corn I could, and had them planted on the 22d of May. I gathered on the 11th August the earliest kind, and it was fit to grind on the 18th, nearly two weeks previous to the next earliest, which was seed I procured of G. Thorburn, and which he called Cobbett's corn, he (Cobbett) having raised the same in England. The earliest kind had a long Indian name, hard to pronounce, and in distributing the seed this fall, I called it Moore's corn. Where I reside is 14 miles north of Utica; generally have frost in September, and I consider it important in raising corn that we should have the earliest. M. MOORE, Jr.

Trenton Falls, Oct. 16, 1834.

Rural Morn. By D. F. A. [For the New-York Farmer.]

MR. FLEET—If you think the following thoughts of sufficient interest to fill an odd corner, they are at your service.

October 4, 1834.

Sweet is the morn ere the sun arise,
Or stars are faded from summer's skies,
While lawn and grove in hazy view
Are spangled and dripping with pearly dew;
And the gentle breeze o'er the garden flowers
Bears balmy sweets from the scented bowers;
Where the bine with roses and lilac twine
And the rich dark purple columbine,
All waving soft in the vapory air,
As the dew to the flower so the bath to the fair.
Then the wood-lark and robin with mocking-bird's song
Welcomes the ploughman, who plods along
To seek for his oxen in yonder vale,
Where the bull-frog is croaking his amorous tale.
And hark! from the thicket arous'd spring the deer,
The bark of the cur dog his nerves sting with fear;
Chough and crow now their clam'rous din begin
Like a mighty congress of mighty men
Disputing the fate of empires o'er,
Or like deaf'ning surge on a rocky shore,
While the cock, from his nightly roost set free,
Answers his neighbors in rivalry.
And the maiden roused from her slumbers sweet
Brush the gossamer's web with her nimble feet,
As she hies to the well in the locust-grove,
Where she parted at eve from the swain she loves,
A thought, and a glance at the moss cover'd sill,
Then down plunge the bucket her pitcher to fill;
Soon the smoke from the chimney curls gracefully high
And tells the repast for the morning is nigh:
Thus enters another day into the world,
And vanishes out like that smoke thats unfurled.'

D. F. A.

NEW-YORK FARMER.

NOVEMBER 1, 1834.

THE WEATHER AND CROPS FOR OCTOBER.—In various sections of the country there have been a number of frosty nights, and, in several places, some snow. During most of the month the temperature has been sufficiently to keep turnips in a growing state. The weather has been fine for out-door work, there having been but few cloudy and rainy days: in consequence, farmers have doubtless become forward in their work.

For ripening corn the weather has been propitious. The crop will not be a full one.

Late potatoes have not generally produced half a crop. They consequently command good prices.

FAIR OF THE NEW-YORK COUNTY AGRICULTURAL SOCIETY, held the fourth Thursday and Friday, the 23d and 24th, of October, 1834, at Harlaem.

It affords the Society pleasure to announce that, although the live stock and the implements were not as numerous as could have been desired, yet the encouragement afforded at this first experiment was amply sufficient, not only to continue the semi-annual Fairs, but to indulge the strongest expectations that they will become of great and increasing interest and usefulness. Considering the many unfavorable circumstances, the sales, both by private contract and by auction, were very considerable, and in many instances at very fair prices.

The weather on both days was pleasantly mild for the season. The accommodations in pens, stabling, and pasturage, on the beautiful grounds of the Red House, were ample and good; and the dinner, by Mr. Demarest, was excellent, and served with taste. Temperance was the order of the day, and decorum, cheerfulness, and conviviality, were characteristic of all the proceedings.

The following officers of the Society were elected for the ensuing year:

CHARLES HENRY HALL, President.

GIDEON LEE, WM. W. HOLLY, GEORGE NIXON, } Vice-Presidents.

A. W. DODGE, Recording Secretary.

S. FLEET, Corresponding Secretary.

ABRAHAM BELL, Treasurer.

SAMUEL SWARTWOUT, ISAAC L. VARIAN, BENJ. L. BENSON, R. T. UNDERHILL, BENJ. POORE, J. R. STUYVESANT, ISRAEL DEAN, ANDREW M'GOWAN, J. H. STRIKER, THOS. ADDIS EMMET, WM. R. SMITH, G. HOPKINS, DAVID AUSTIN, A. B. WILLIAMS, D. P. INGRAHAM, } Executive Committee.

Report on Cattle.

Mr. Geo. Fox entered the full-blooded short-horn Durham Bull, Prince, bred by C. H. Hall; by many thought equal to any on the ground. Also, two Durham Calves, one very fine.

Thomas Addis Emmet, of New-York, one full-blooded imported Durham Cow, Red Rose, and a full-blooded Bull Calf, by C. H. Hall's Young Regent, out of Red Rose. These animals were highly approved of as being pure in blood and of excellent form.

Charles H. Hall, of Harlaem, thirty-two head of short-horn Durham Cattle, including Cows, Heifers, and seven Bulls. Mr. Hall's cattle were generally thought to be superior to any on the ground. His imported stock, and the cows descended from them, were unusually fine, being very large, and prime milkers. A list will be given in our next.

Dr. Poole, of New-Brunswick, N. J., thirty-seven head of full, three-parts, and half-blooded Durham and Devonshire cattle. This stock showed proofs of high breeding; and the Committee, in behalf of the Society, felt under obligations to this gentleman for the spirited manner in which he appeared with so large a stock of cattle from the neighboring state of New-Jersey. The subjoined is a list.

1—Minna, a Devonshire Cow, sire and dam both imported.
2—Brenda, ditto, ditto, own sister to Minna.
3—Fanny, got by the imported short-horned Durham bull Bishop, (see Bishop's pedigree in British Herd Book,) her dam, Minna, No. 1; she had a calf with her.
4—Mary, Durham Cow, got by the imported Durham bull, Dishley, her dam by Dishley; grandam, an improved breed.
5—Red heifer calf, out of Mary, got by the thorough-bred, short-horned, Durham bull Defiance, (see Defiance's pedigree in English Herd Book.)
6—Juliet, an imported Alderney.
7—Leopardess, Durham heifer, got by the Durham bull; dam, by the imported Durham bull Bishop, (Bishop and Defiance are both thoroughbred herd book animals.)
8—Stately, Durham heifer, got by Defiance, out of a superior cow of good crosses.

9—Pigeon, white heifer, got by Defiance.
10—Spot, heifer, red and white, got by Defiance, out of a fine cow.
11—Lily, white heifer, got by Defiance, out of a fine cow. A calf with her by a Durham bull.
12—Lavinia, got by the Durham bull, M'Duff, out of the Devonshire cow, Minna, No. 1.
13—Nancy, red heifer, got by the Durham bull, Bishop, out of a Durham cow that gave 24 quarts of milk a day. A calf with her.
14—Louisa, red heifer, by Bishop, out of a superior cow. With a calf, by a Durham bull.
15—Dinah, red heifer, by the Durham bull, Bishop, out of a fine native cow.
16—Medley, bull, red and white, got by the Durham bull, M'Duff, out of the imported Alderney, White Rose. M'Duff is a thorough-bred short-horned Durham bull. Pedigree in the English Herd Book.
17—Monroe, white bull, got by M'Duff; dam, Laura, by Royal George; her dam, a Holderness, whose sire and dam were both imported.
18—Higby, roan bull, got by M'Duff; dam, Clara, by Royal George; her dam, a Holderness, whose sire and dam were imported.
19—George, bull, red and white, got by M'Duff, out of the Durham cow Mary, No. 4.
20—Brenton, bull calf, red and white, got by the Durham bull Defiance, out of the Durham cow, Mary, No. 4.
21—Henry, bull, red and white, got by Defiance, out of Juliet, an imported Alderney.
22—Marcus, bull, roan, got by the Durham bull Marcus, out of the imported Alderney, White Rose.
23—Bull calf, red, got by Defiance, out of the Devonshire cow Brenda, No. 2.
24—Bull calf, red and white, by Defiance, out of Spot, No. 10.
25—Bull calf, red, by a Durham bull, out of Nancy, No. 13.
26—Heifer, roan, got by Defiance; dam, by Bishop.
27—Heifer, red, got by Defiance; dam, by Bishop.
28—Heifer, red and white, by a Durham bull, out of Marcia, by M'Duff.
29—Heifer, mostly white, got by Defiance; dam, by Bishop.
30—Heifer, roan, got by the Durham bull, Marcus, out of a cow by the Durham bull Banquo.
31—Heifer, red, by Defiance, out of a good native.

Mr. Leggett, of Westchester, one two-year old Heifer, by Mr. George Fox's bull, Prince; dam, a half-bred cow; one of the best heifers, if not the very best, on the ground, and in appearance equalled a full-blooded Durham.

Mr. Adee, Westchester, one young Bull, half Durham, and half-polled, fourteen months old, large and fine; and one good polled cow, dam of the bull.

James Chesterman, of Harlaem, one three year old Bull, by C. H. Hall's Patroon, full-blooded short-horn, out of a half-blood Devonshire cow. Mr. C.'s bull exhibited proof of excellence of the short-horn breed.

Willet Seaman, of Westchester, one full-blooded Devonshire Bull, of six years old, bred by Dr. David Hosack, a fine animal of pure blood.

James Beekman, two fine Cows, and one mixed Devon Heifer, very beautiful. Mr. B.'s native cows were, as is usual with him, superior animals.

James D'Wolfe, of Westchester, entered, through Mr. Quinby, one full-blooded Durham Bull, by Lucifer, out of the imported cow Canada, a short-horn. The bull was much admired.

Charles Bathgate, of Westchester, one three-quarter blood Durham Heifer; one half blood ditto; one full blood Alderney ditto; eight cows of mixed breed. Mr. B.'s cattle, although not of any distinctive breed, except his excellent Alderney cow, showed his industry and success in crossing with the Durham breed.

Mr. J. Grieves, Newark, N. J., one Teeswater Bull, two years old; two half-bred Durham Calves; one full-blood ditto; one native breed Heifer; and one pair of working Oxen. This gentleman showed much interest and spirit in bringing forward not only fine cattle, but horses of high breeding.

Mr. Allerton, of Bloomingdale, drove on the ground a double yoke of fine working Oxen.

Report on Sheep.

Lemuel Wells, of Yonkers, encouraged the Fair by having on the ground a large flock of pure blooded Saxony and Merino Sheep. The Committee were pleased to find them, on examination, superior in their wool, as well as in their size and form, to any sheep of their breed which has ever come under their observation, and especially so on taking into view the large number of five hundred. Some were selected and purchased for breeding, and distributed in various sections of the Union. The Society feel under much obligation to Mr. Wells for the pains taken in furnishing so large a number of fine wooled sheep for the Fair. There were—40 full blood Saxony bucks,
50 " " ewes,
180 Saxony Merino ewes,
50 " " ewe lambs,
80 " buck do.
110 " from 1 to 3 years old.

C. H. Hall had on the ground a flock of pure blood Bakewell Sheep, bucks and ewes. They were superior animals, and sold at high prices. It is understood that Mr. Hall intends to make a yearly sale of these sheep, —a breed much valued at this time by farmers.

Wm. Grieves also had sheep of the Bakewell and Cotswold breeds, of good quality. Some of them sold at fair prices.

Report on Swine.

H. Huxley & Co., 81 Barclay st., New-York, one fine Berkshire Sow, one year old, with seven superior pigs, and four pigs of the same breed, but of an older litter. The former were littered the 11th of August, and sold readily for $5 each.

Mr. J. Bucknor, Bloomingdale, in New-York, a noble white Sow, two years old, with ten Pigs, eighteen days old—very much admired. Seven sold at $5 each.

There were, by other persons, black China Pigs, several of different breeds, all excellent hogs.

Report on Horses.

The number of Horses was not large. There were, however, some high bred, as well as several draft horses. No sales were effected, owing to the want of time. The calls on the auctioneer for other stock were greater than was anticipated.

Report on Agricultural Implements, &c.

H. Huxley & Co., 81 Barclay st., New-York, exhibited a variety of Implements and Machinery:

1—Improved patent manure forks.
2— " " " " riveted prongs.
3—Straw cutting knives.
4—Hay " "
5—Cast steel hoes.
6—Ames' cast steel spades.
7— " " " shovels.
8— " long handled ditching shovels.
9— " short " " "
10—Back strap shovels.
11—Plain "
12—Socket spades, No. 2.
13— " " No. 3.
14—Bramble or brush scythe, an excellent article to keep a clean farm.
15—Post axes.
16—Mole traps.
17—Farmers' bill-hooks, with hammer and claw.
18—Cast steel turnip hoes, very superior.
19—Corn crackers, for cattle or for families.
20—Double corn sheller, enclosed in a box to prevent corn from scattering.
21—Fanning mills.
22—Patent straw cutter, very new and superior.
23—Large size patent cast iron pump.
24—Small " " " " "
25—Mayher's globe plough, eight-pointed and self-sharpening.
26—Side-hill or swing plough.

James Maxwell, 259 Bowery, New-York, exhibited Mr. Weeks' Hand Thrashing Machine. It had the appearance of performing well; but it was not put in practical operation. In exhibiting newly-invented machinery, no pains nor expense should be spared on such a public occasion to have them in full operation.

Mr. Jacobs, of Brooklyn, exhibited Flagg's Thrashing Machine and Horse Power; strong, durable, and probably in more general use than any other. Price, $110.

James Woodside, of Washington, had in practical operation his Revolving Harrow and Sowing Machine; this consists of a cart containing a hopper and sowing apparatus, with a cylinder attached, having iron teeth. This cylinder makes six revolutions while the cart wheels make one. It was tried on newly ploughed sward ground, and performed to general admiration. It is considered an important improvement. Two were sold at $120 each.

Dr. R. T. Underhill presented Isabella Grape Vines, as samples of his stock for sale at his vineyard at Croton Point. Dr. U. has been very successful in raising this excellent grape. His vines are managed in a superior manner for market.

H. Huxley & Co., 81 Barclay st., 18 varieties of the most esteemed natural grasses for hay and pasturage.

Mr. W. K. Townsend, of New Haven, and others from that section, arrived with their stock after the Fair had closed. This is to be regretted, as much additional interest would have been created by their presence.

STATE AGRICULTURAL SOCIETY.—*Albany Cattle Fair.*—The Fair of the Albany Agr. Society, for the exhibition of the various productions of domestic industry, implements of husbandry, specimens of mechanical skill, &c., closed on evening of Oct. 9. The productions of the farm, the work-shop, and the manufactories, were in more than usual profusion and variety, and exhibited gratifying proof that the progress of improvement among us, in almost every branch of the useful and ornamental arts, instead of retrograding, is still onward.

The following sketch of the articles exhibited at the fair has been deferred longer than we could have wished, with a view of making corrections and additions. It is probably still imperfect, especially as respects the agricultural and horticultural productions.

The live stock, though not as numerous as on the former occasion, afforded an exhibition of uncommonly select and very superior animals, particularly of improved breeds of cattle.

By C & A. W. Johnson.—A case of jewelry and silver cutlery of their own manufacture—consisting of dessert knives and forks, with onyx handles mounted with silver; silver fish knives, with richly carved pearl handles; fruit knives, silver throughout, with embossed handles, all of the finest workmanship; spoons of every variety of size, shape, and finish, up to the large soup or gravy spoon. Among them, several articles of a new or improved construction; a silver oyster fork; a pump syphon, and a sugar shifter; also, a case of articles for the use of travellers and school misses, containing a silver knife, fork, and spoon. The jewelry was also of the most fashionable and rare kind. The cameos, and mosaics particularly, were much admired, as were also the splendid diamond, coral, and emerald sets of ornaments. This establishment is entitled to particular notice, and we may add, to the encouragement of our citizens, for we understand that its manufactures already exceed the quantity heretofore exported in exchange for other articles from the manufactories in New-York, and that the establishment is now on such a footing as to be able to supply any demand.

By Robert L. Kearney.—Several specimens of gilding of the most intricate and difficult kind; pictures and mirror frames, surpassed only in beauty by the exquisite paintings and engravings which they enclosed. These were of every possible variety, and suited to the pictures, the beauty of which they contributed to enhance. Unimportant as it may seem, it is difficult to conceive, without the opportunity of comparison here presented, how much the effect of a good picture, whether painting or engraving, may be marred or improved by the style of its frame. Such as desire to set off a picture to the best possible advantage, cannot do better than to avail themselves of the taste and judgment of our fellow citizen, Mr. Kearney.

By Bayeaux & Lloyd.—Trunks of the French folio construction, a useful and very elegant article; a saddle of a peculiar manufacture and highly finished, as was also a gig harness mounted with brass, equal, if not superior, in point of strength and beauty, to any exhibited. All of these were superior specimens of workmanship.

By Wm. Smith.—A gig harness, fancy colored, extremely well and tastefully finished.

By Paddock, Spencer & Co.—Saddlery and harness, of the most approved patterns, and well finished throughout. Among them a lady's quilted side-saddle, almost rivalling in neatness the finest needle-work, and a gentleman's fancy colored saddle, of equally curious workmanship; also, a splendid brass mounted coach harness. of the modern light but durable finish. Besides these there were trunks of the French folio construction, made of the russet and black leather.

By Edward B. Slason.—A saddle of the shafton kind, splendidly made, and creditable to the manufacturer.

By Charles Whitney.—Trunks and saddlery of the most durable and highly finished kind: gig harness, (two sets,) brass and silver plated—light, durable, and extremely neat in workmanship.

By Howard Nott & Co.—A new cooking stove, by Dr. Nott, for burning Anthracite coal The capacity of this stove was fully tested on the spot: roasting, boiling, frying, &c, &c., going on at the same time, and all done at a turn. The stove is so contrived that all these operations are kept distinct from each other—the effluvia from each article being conducted off by separate pipes into the common smoke flue, and upon this trial nothing escaped in the least degree perceptible. There was also a parlor grate, for coal, made for a gentleman in this city, in the new style of ornament called Grecian, richly and accurately cast, and a stove of a peculiar and large capacity, intended for the Commercial Banking room, all of them in the usual workmanlike style of this firm.

By Daniel S. Kittle.—A dumb stove, on a new plan, intended and well calculated to distribute the heat through all its parts. It was tastefully trimmed with brass upon the edges, and neatly made in all respects.

By Pratt and Treadwell.—A parlor stove for wood, of an entirely new and beautiful construction, the side representing a building with a gable supported by columns, and an arch underneath, pierced through from side to side, separating the basement or fire chamber from the flues at the ends and at the top, and furnished with a vase within the arch for water. The fire chamber is also pierced in such a way as to represent windows between pilasters—filled with ising-glass, and intended to illuminate that part of the stove when in operation. The whole is surmounted by a balustrade and urn of cast iron. The castings, we learn, were by Messrs. Thos. Potts & Co., and are in their best manner.

By John Iggett.—A new cooking-stove for wood. This was not in operation, but evidently capable of doing all kinds of cooking at one and the same time, and in almost any quantity. The peculiarity of its construction can only be understood from inspection. It is ingenious and well worth the attention of economists.

By W. Johnson.—An improved cooking stove on Barker's plan—well adapted apparently to all culinary purposes.

By Steele and Warren.—Several articles of hardware, of American manufacture. The cutlery particularly, equal certainly in appearance to the finest samples from abroad.

By Lemuel L. Steele.—Dusting brushes, useful and ornamental in the highest degree, a creditable specimen of his skill and taste, and various other articles in his line.

By Edward S. Willett.—A satin beaver hat, his own handiwork, an article of great beauty and of the highest finish.

By Robert M'Lachlan.—D flutes, of cocoa, silver mounted, beautifully finished, and capable, in good hands, of discoursing liquid music Nothing could be finer in their way.

By Wm. Beach.—A concave self-sharpening plough, highly spoken of as a well made article.

By Mr. Leonard.—A pair of mocasins, richly ornamented.

By J. G. Webb.—A splendid embossed brazen chandelier, intended for burning the spirit gas, the branches of brass and the receivers of cut glass, alternately covered with a shade of ground glass. It was lighted during the evenings of the exhibition, and was suspended from the centre of the great hall which it served to light sufficiently and brilliantly, notwithstanding the spaciousness of that apartment. It was also, in the highest degree, ornamental, and well adapted to churches and other public buildings.

By Wm. Halse.—Mushroom catsup, several bottles of an excellent quality.

By C. L. Swart.—Specimens of a recent preparation of the same article, of a fine flavor.

By Nathan W. Palmetier, of Ballston.—Two superb counterpanes, very much admired for their execution and fabric.

By H. Meech.—Specimens of oil cloth from his factory in Hallenbake st., new patterns, and remarkable for their firmness and well selected and beautifully contrasted colors.

By Daniel W. Webster.—A new threshing machine, considered a great improvement, as was also the model of a machine for dressing flax.

By Jacob Wilsey.—A fanning-mill on an improved plan—a very great improvement on the old.

By C. N. Bement.—Several kinds of ploughs, thought to be decided improvements on those of the old construction, substantially and neatly made.

By John Rich.—A side hill plough of an improved, and in the opinion of practical men, of the best construction.

By Wm. Craig.—Ploughs of the Scotch and Cultivator patterns, a neat, durable, and well finished article.

By Benj. F. Boyden.—Two cast hoes of a peculiar pattern.

By Wm. Berry.—A rifle beautifully inlaid and mounted with silver. It was considered in no respects inferior to the imported article; too fine to be used except on holidays.

By J. & J. L. Groesbeck.—Indian rubber boots and shoes, trimmed with fur.

By D. Griffin.—A lady and gentleman's wig, natural and extremely deceptive imitations, and seasonable withal, if we may say as much without meaning any political allusion.

By Benedict and Roby.—Mortice latches of a new and simple construction, answering all the purposes of latch and lock, and composed at the utmost of but three or four parts.

By Wm. Kline.—Several culinary articles of copper, creditable specimens of workmanship.

By John M'Carty, Esq.—Several specimens of coal from Coeymans, apparently of a pure and valuable kind.

By Wm. Craig.—Barrows of different kinds, neatly and durably made, and of the best material—light and even elegant, though an article, one would think, scarcely susceptible of being particularly tasteful.

By Mrs. Maynard French.—A beautiful worked cape of the French school, her own handiwork, unsurpassed in its texture and execution by any of the imported fabric.

By Wm. Wolley.—Tubs of cedar, in nests; churns, pails, &c., of the neatest and most durable workmanship.

By Wm. Gilbert, of Bethlehem.—Onions of immense growth, some of them from six to eight inches in diameter.

By S. Van Rensselaer, jr.—A great variety of vegetables of a superior kind; several kinds of cabbage, tomatoes, celery, &c. &c., the latter measuring nearly four feet in length; three beets, the average weight of which was upwards of 50 pounds; Catawba grapes, Virginia corn, English spinnage, quinces, &c.

By L. Cruttenden.—Potatoes and turnips from his own grounds, of a rare quality and unusual size.

By Mrs. Cruttenden.—Preserves of the citron melon, tempting in appearance, and doubtless of a superior flavor.

By Jacob Henry.—Russian cabbage turnip, an exotic, rarely produced in this country in such perfection.

By J. Whiting.—Curious specimens of South American squashes, also a rare production here.

By Alexander Walsh, of Lansingburgh.—Alexander and Harvey apples, blue Madeira and black Gammot grape; Oxalis crenata, a rival of the potato; black potatoes; perennial flax; strawberries; skinless oats; a quantity of Mulberry trees of three years growth, and seeds of a French coxcomb, near seven feet high, for distribution; filberts and peanuts from his farm, and other rare productions.

By Joseph Ballad, of Lansingburgh.—A quantity of horse chesnut and white mulberry trees, for distribution.

By George A. Hoyt, of Moreau, Saratoga county.—A variety of vegetables of a superior quality.

By Orrin Goodrich.—Butter, from Berkshire, Mass., said to be very good.

By the Orphan Asylum.—Fine potatoes, turnips, and other vegetables.

By Dr. H. Green.—Native grapes, from the wild grape so common in New England.

By Aaron Thorp.—Peas of the third crop, and skinless oats.

By Judge Buel.—A large Valparaiso squash, specimens of Dutton corn, and of a long gourd or squash known as Hercules' club.

By I. & J. Townsend.—A great variety of choice fruits and vegetables.

By George Teague.—Tuscarora cabbage, monstrous specimens, with other vegetables, from the Alms-house.

By Mrs. Wells.—A quilt of rare device and workmanship.

WORCESTER CATTLE SHOW.—From the Worcester, Mass., Palladium, we make a few extracts from the reports of the committees of this cattle show:

The Farmers' yearly holiday occurred last Wednesday, Oct. 8, and never was it more attentively observed in this county. It was pleasant to see the yeomanry of the county pouring into our village by thousands, and bringing with them, in the spirit of innocent rivalry, the choicest productions of their farms, their dairies, and their fire-sides. The show, we learn, was not so extensive in some of its departments as on some former occasions; but the specimens exhibited were indicative of the gradual progress of improvement in husbandry and the other useful and ornamental arts of life, which it is the purpose of the Agricultural Society to foster and promote. But we trespass on the province of those whose duty it is to report the details of the exhibition.

At 11 o'clock the Society, with a numerous assemblage of citizens, repaired to the South Church, where an address was delivered by Charles Allen, Esq., of this town, which was replete with the products of a sound and matured mind, garnered up in an extensive observation of the present and the past, and exhibited in a manner well adapted to the intended effect.

After the exercises in the meeting-house, the Society partook of a substantial dinner provided by Mr. Bonney at the Central Hotel.

By those who have been familiar with the county from the commencement of the Society's efforts, it is said that a great and important change has already been effected in our agricultural character. This fact, it is presumed, will stimulate all to renewed diligence, that every successive exhibition may excel its predecessor.

Ploughing Match.—The Committee on the Ploughing Match report that they found a beautiful plat of ground for ploughing near the proposed depot of the railroad. The Committee of Arrangements had caused the plat to be laid out into *lands* of the usual dimensions; but as the several lands had not been numbered, a short delay was occasioned in the morning from that circumstance. The teams started at precisely half-past nine o'clock, having taken their respective lands by lot, and the work was all completed at ten minutes past ten o'clock. The shortest time within which any team performed its work was twenty-seven minutes. There appeared upon the ground, to contend for the premiums, ten single and eight double teams. Of the single teams, it was found that the one belonging to Simeon Burt, Esq., under the care of that skilful ploughman, Mr. James Campbell, was entered with the secretary a day too late—this team, of course, could take no premium. Mr. Burt, however, determined that his team should not quit the field so. He directed them to do their part of the work, and they did it well.

After the teams had left the field, the committee were struck with the extraordinary and uniform goodness of the work. The chairman was apprehensive that he should be obliged to take the responsibility of deciding on questions upon which his associates might be divided. No such exigency however, occurred; and in order that the deliberations of the committee might be had with entire impartiality, the chairman gave to his associates the number only of the several lands ploughed, and not the names of the gentlemen owning the teams that ploughed them, until the premiums had been determined upon by the committee. The committee claim no merit but that of going about their work with a sincere desire to decide right, and in the exercise of their best skill and judgment, they recommend that the several premiums be awarded as follows:

To Wm. B. Harrington, of Grafton, for the best work with two yoke of oxen, $10.

To Simeon Carpenter, of Charleston, for the next best work with two yoke of oxen, $6.

To Elbridge G. Wheelock, of Milbury, for the next best work with two yoke of oxen, $4.

The team of Mr. Harrington consisted of two pairs of three years old *steers*. The beauty and docility of those animals must have attracted the attention of the Society; though it was only the quality of their work which was considered by the committee. It is believed that no former show can furnish an instance of so good work done by so young a team. The plough used by Mr. Harrington, and, indeed, nearly all the ploughs upon the ground, were the cast iron ploughs of Mr. Nourse, with a cutter and separate roller. The ploughs of Mr. Nourse seem thus to have received the almost unanimous testimony of our husbandmen in their favor.

The single teams did their work with great neatness and dispatch, evincing that they were worthy of the liberal premiums which it has been the policy of the trustees to provide for them. Five of the nine single teams are entitled to premiums. They all deserve them. The five recommended by the committee to receive the premiums are

Arnold L. Allen, of Shrewsbury, first, $12.
Leonard Whealock, of Grafton, second, $9.
Tyler Carpenter, of Sutton, third, $7.
Heywood & Rice, of Worcester, fourth, $5.
David Carpenter, of Charlton, fifth, $3.

All of which is respectfully submitted.

IRA BARTON, Chairman.

Report of the Committee on Neat Cattle.—Your committee would congratulate the Society on the beautiful appearance of the neat stock exhibited this day, by the enterprising farmers of our county. There were nine bulls presented for premiums, all of which were richly deserving of the approbation of your committee, and gave evidence of a decided improvement in our breed of cattle.

The bull calves, although not so numerous, bid fair to rival in strength and beauty their illustrious ancestors, and probably look forward with proud and generous emotions to the day when their young and vigorous posterity shall cover our hills and gladden the hearts of our free and independent yeomanry.

One calf, 7 months old, was offered, (for exhibition only,) by Ex-Governor Lincoln, which was worthy of commendation, for its beauty of form and neatness of appearance.

The 3 years old steers, broken to the yoke, which were presented to the attention of your committee, were of the most beautiful and interesting kind. There were six pairs; they would fairly rival any that have heretofore been exhibited, for strength, docility and neatness, and speak much in favor of the care and attention of their several owners. The competitors may be justly proud of such an exhibition, and although all cannot be successful, they will carry with them to their homes and to their firesides the consciousness of having done much to render this cattle show an honor to the county, and to foster a generous rivalry in the breasts of those who are engaged in the noblest employment of man, the cultivation of the soil.

Much might be said of the two years old and the yearling Steers, but your committee forbear to say more on that subject.

All of which is respectfully submitted.

CHS. C. P. HASTINGS, Chairman.

Fat Cattle.—The committee on fat cattle report, that the exhibition of fat cattle, though not perhaps so numerous as on some former occasion, was in the opinion of the committee highly creditable to the county. In the quality of the cattle it probably would not suffer by a comparison with the best of our former shows.

The committee have awarded the premiums in the following manner:

To Capt. Lewis Barnard, of Worcester, for his short-horned red ox, four years old, and weighing 2,067 pounds, the first premium of $20.

To Joshua Eveleth, of Princeton, for his red ox, 4 years old, and weighing 2,029 lbs., the second premium of $15; and to Capt. Lewis Barnard, of Worcester, for his second red ox, 4 years old, and weighing 2,080 lbs., the third premium of $8.

All of which is respectfully submitted by the committee.

THOS. KINNICUTT,
SAMUEL MIXTER,
LUTHER BURNET, Jr.
CYRUS GALE,
LUKE BAKER.

Butter and Cheese.—The committee to whom was assigned the duty of examining the several lots of butter and cheese, offered for premium and exhibition, and award the premiums to the successful competitors, having attended to that duty, ask leave to report:

The whole number of boxes of butter offered for premium was ELEVEN. Two only were offered for exhibition. Of these, most were of excellent qualities. But the committee, after a careful examination and comparison, awarded the first premium, of $7, to Royal Pickard, of Worcester; the second premium, of $5, to Stephen Hastings, of Sterling; the third premium, of $4, to Samuel Chamberlain, of Westborough; and the fourth premium, of $3, to Walter Bigelow, of Worcester.

Having examined the butter, the committee passed to the examination of the cheese. There were thirty-eight lots offered for premium. There was some difficulty in determining which was best among so many good lots. But after a careful examination, the first premium of $10 was awarded to Hollis Tidd, of New-Braintree; the second premium of $7, to David Lee, of Barre; the third of $5, to John Matthews, of New-Braintree; and the fourth of $3, to Isaac Hunter, of New-Braintree. The first premium of $8, for the best old cheese, the committee awarded to Adams Thompson, of New-Braintree; and the second of $6, to Hollis Tidd, of New-Braintree. For the best sage cheese, the premium of $7 was awarded to Daniel Bacon, of Barre.

The quantity of cheese offered was larger than usual; and the committee were gratified to find it so generally of a good quality.

A letter was put into the hands of the committee, from Mr. Boswell Converse, of New-Braintree, stating particularly the manner in which he makes his cheese; and the committee were pleased to find that so much attention has been paid to the subject. Your committee also feel bound to notice a communication from John W. Lincoln, Esq., of Worcester, in relation to the management and production of his dairy—from which it appears that from the average of eleven and a half cows, from the first day of June last, to the first day

of October current, he has made 2516½ lbs. of new-milch cheese, 167 lbs. of four-milch cheese, and 117½ lbs. of butter; and in addition, milk has been used by the family of his tenant as wanted, and by himself for his own breakfast and supper when at home—(a very wholesome food, in the opinion of the committee, and very convenient for one who is destitute of a help-mate.) Particular statements of this kind, the committee consider important, and would recommend to the society the consideration of the propriety of adopting some measures to obtain them, and make them more general at future exhibitions.

Your committee cannot close their report without a single suggestion in relation to the importance of particular attention to dairies. Good butter and good cheese make two indispensable items in good living, and they must necessarily always command a good price; and there is always a corresponding difference between butter and cheese of an inferior or ordinary quality and that of a superior quality. It cannot have escaped the attention of all, that those farmers in this section of our country, which is so well adapted to grazing, who have paid particular attention to their dairies, have been constantly thriving. They have in fact carried it on so successfully, in some of the towns in the north-west part of our county, that almost all of them either *are* rich, or fast becoming so. Whether they have been rendered so by actual receipts of premiums, or by industry and enterprise, which generous competition has inspired, we will not determine; but strongly suspect by the latter. And we hope ere long to see the same general competition in the management of dairies, as well as other laudable branches of business, producing like happy results throughout our county, the commonwealth, and the whole country.

By order of the committee.

DAVID T. BRIGHAM, Chairman.

Heifers, &c.—The committee upon heifers and heifer calves have attended to the duties assigned to them, and Report: That the number of heifers entered for premiums and exhibition is unusually large the present year, and the animals are of a very superior quality, such as, by their size, fine proportions, color, and general good appearance, show that the growers have bestowed considerable attention upon and done much towards improving our breed of cattle. The Committee, altho' unanimous in the expression that they had rarely if ever witnessed a superior exhibition of heifers in the Society's pens at any previous show, yet deem that there is still room for further improvement.

Much has already been done towards improving the quality of our neat stock. An aptitude to fatten has been combined by judicious crosses with fine forms and good qualities for the dairy. Long experience has shown that the best cattle, altho' they may be dear at first cost, are upon the whole the cheapest and most profitable for the farmer. This affords a strong inducement to all growers, to raise the best stock they can.

Much pains and great expense have been bestowed for the improvement of our native breed of cattle by crossing with the best English stock that could be produced.

This system has been carried to as great an extent as is desirable perhaps at present; the results have been thus far upon the whole beneficial, so far as regards size, form, and a tendency to fatten easily; so far as regards good qualities for the dairy, quantity and quality of milk, there remains yet much to be done.

Feeling as your Committee do, that the size, color, and fine proportions of heifers are after all, for the purpose of the dairy, but secondary considerations, and knowing that the superior qualities of the parent stock are in a good degree inherited by their offspring, they would suggest to those engaged in growing stock for the dairy, the expediency of raising no calves but those from cows remarkable for the *quality* as well as the quantity of their milk. By pursuing such a course, a very material change will be effected in the results of dairying operations.

Your Committee believe that, from judicious crossing of our native breed with the best English breeds, there will spring a race better adapted to our climate and mode of keeping, and more valuable for fatting and for the dairy, than either race would be unmixed.

The test of examination in the Society's pens to which heifers are exposed can be of course no criterion as to their comparative worth as cows for the dairy. The size, and fine proportions and general good appearance of the animals, are all that the Committee can found their judgment upon; of course it may, and probably often does happen, that heifers for which premiums have been awarded turn out to be, for dairying purposes, quite ordinary animals, while others of more humble and unpretending appearance prove to be the genuine fill-pails of the herd.

Much has already been accomplished by the farmer towards perfecting the size and form of his neat stock; all that he can desire more is, that that portion of it used for the dairy shall in productive value rival their high standard of fine appearance; when this is accomplished, and it may be done by care and attention, the farmer has nothing further to desire in point of improvement for his cows. They will then be as well nigh perfect as females can be.

Had there been a larger number of premiums at the disposal of your Committee, they would have found no difficulty in distributing them among that proportion of the young stock submitted to their inspection.

Your Committee cannot forbear expressing the pleasure they feel, at witnessing such an exhibition of the superior quality of the neat stock grown in the heart of the Commonwealth as this day's show has afforded.

WM. N. GREEN, Chairman.

ESSEX AGRICULTURAL SOCIETY.—The Annual Exhibition by this Society took place at New-Rowley, on Thursday, (25th.) The day was fine, and the assemblage of people, including the most intelligent Farmers and Citizens of the County, unusually large—and the show of animals, and articles of domestic manufacture, was highly creditable to the Society, manifesting a continued and increasing interest in these Exhibitions.

We noticed in the pens—

12 Bulls, from 1 y. 4 m. to 3 y. old,

Several Calves, one aged 6 m. 6 d. wt. 505 lbs.

7 Milch Cows,

12 Heifers, in milk,

12 pair of Steers,

19 young Horses and Colts, 3 to 5 years old, with several Swine, and other animals.

In the Ploughing Match, there were 8 double teams and 3 single teams—the work was said by the Committee to have been well done, considering the rocky and hard condition of the land, it being now very dry. The ploughs were mostly of the best approved patterns, but were not particularly adapted to this rocky and hard soil—they were better suited to turn sward land without rocks.

The Exhibition of Manufactured Articles was very good. There were nearly 200 different articles—many of them neatly and curiously wrought. The specimens of work by children under 12 years of age were very numerous, handsomely wrought, and worthy of much praise.

Among the articles exhibited, we noticed several of beautiful appearance made from the fibre of the stock of the Milk Weed (Asclepias Syriaca,) an article we have never before known used for this purpose. Judging from these specimens, it would seem that this hitherto cumbersome weed is capable of being applied to many valuable uses. We hardly know which most to admire, the beauty of the articles, or the ingenuity that wrought them. We were not informed as to the comparative amount of labor necessary to be applied to this species of manufacture, but do not readily perceive why any great degree of extra labor, as compared with silk, should be required.

There were exhibited several parcels of Butter and Cheese of fine quality, and the tables were bountifully supplied with Melons, Peaches, Pears, Apples, Grapes, &c. from generous individuals in the vicinity.

One hundred and fifty members of the Society, with many invited guests, dined together at Col. Savary's, to their entire satisfaction.

At 3 o'clock, the Society assembled at Mr. Braman's Meeting-house, where prayers were offered by the Rev. Mr. Fox, of Newburyport, and an impressive Address delivered by Col. Mosely, President of the Society.

The officers of the Society continue nearly the same as the last year.

[A long list of awarded premiums follows: we regret that we have not space for them.]

A List of Officers of the Mass. Hort. Society, chosen on the 4th October.

President—JOHN LOWELL, Roxbury.

Vice Presidents—Zebedee Cook, Jr. Boston; Elijah Vose, Dorchester; Enoch Bartlett, Roxbury: S. A. Shurtleff, Boston.

Treasurer—William Worthington, Dorchester.

Corresponding Secretary—Jacob Bigelow, M. D. Boston.

Recording Secretary—R. T. Paine, Boston.

Professor of Botany and Vegetable Physiology—John L. Russell.

Professor of Entomology—T. M. Harris, M. D.

Professor of Horticultural Chemistry—J. W. Webster, M. D.

Standing Committee on Fruits—Elijah Vose, *Chairman;* Samuel A. Shurtleff, Robert Manning, Samuel Downer, William Kenrick, E. M. Richards, B. V. French, Samuel Pond, Thomas Mason, P. B. Hovey, Jr.

Committee on Products of the Kitchen Garden—George C. Barrett, *Chairman;* Daniel Chandler, Jacob Tidd, Aaron D. Williams, Leonard Stone, Nathaniel Davenport.

Committee on Flowers, Shrubs, &c.—Jonathan Winship, *Chairman;* C. M. Hovey, J. A. Kenrick, Samuel Walker, George W. Pratt, David Haggerston.

Committee on the Library—Elijah Vose, *Chairman;* Jacob Bigelow, Zebedee Cook, Jr., George W. Pratt, T. M. Harris, R. T. Paine, C. M. Hovey, *Librarian.*]

Committee on Synonyms of Fruits—John Lowell, *Chairman;* Robert Manning, Samuel Downer, Wm. Kenrick.

Committee on the Garden and Cemetery—Joseph Story, *Chairman;* Jacob Bigelow, George Bond, Zebedee Cook, Jr., B. A. Gould, Joseph P. Bradlee, Charles P. Curtis, Samuel Appleton, Elijah Vose.

Executive Committee—Zebedee Cook, Jr. *Chairman;* George W. Pratt, Cheever Newhall, Elijah Vose, Joseph P. Bradlee.

Committee of Finance—Elijah Vose, *Chairman;* Cheever Newhall, B. V. French.

[This list of officers shows that the Society is organized for efficiency.]

DUSENBERRY'S GARDEN AND GREEN-HOUSE.—Among the commercial gardens which persevering industry has reared from cold clay and rock to a beautiful spot, is that of Mr. Dusenberry's garden, on 6th Avenue and 42d st. The green-house is arranged tastefully. The principal staging for the plants is in the middle, having a walk around it; and the sides of the house lined with shelves, which are covered with plants.

COW-HOUSES.—Among the objects of inattention by farmers is suitable covering for cattle in winter, particularly cows. Generally, among farmers, they suffer from too much exposure to cold and wet; and among milkmen in and near cities, from want of pure and wholesome air. The following is from the Edinburgh Quarterly Journal of Agriculture.

Cow-houses for dairy-cows ought to be 10 or 12 feet high in the side-walls, with proper apertures in the wall, and no lofts over the cows, that they may breathe abundance of wholesome air. Animals so large and well-fed as dairy cows, whose lungs are capacious, ought to have abundance of free air, as breathing of foul air is injurious to them, especially when many of them are placed in one cow-house. Cows do not require much heat, so that they are kept dry; too much fresh air cannot be given them. All cow-houses, and the roads into them, ought to be well paved, and kept clean, as the effluvia of dung or urine cannot fail to injure cattle; and it is a great advantage to cows that they be well cleaned and curried with a comb and brush once every day. Where thin flags of stone can be procured, one of them, about four feet square, should be placed on each side of every stall, for two cows. An iron rod, called a slider, about 20 inches long, should be fixed at both ends in a perpendicular position on each side of each flag, so that a cow may be bound to each slider, by a chain which should slide up and down on the slider when the cow raises or lowers her head. When bound in this manner, the cattle are very secure, and have all the freedom necessary to move and lick themselves. Stone troughs are now generally placed before the cows to receive their food; and a passage in front for feeding the cows is a great convenience. Every cow-house ought to have a tank or well to receive the urine. I saw nothing in continental husbandry that I would more anxiously wish to see introduced into Scotland, than the careful manner in which the urine of cattle, and every species of dirty water, is carefully preserved and used as manure to the land. The Belgians have not only tanks at their cow-houses for collecting the urine, but they have reservoirs on different parts of their farms, to which it is removed as collected, and kept in them, excluded from the air, till it be convenient to be sprinkled upon the ground, which is generally done a few days before sowing the seed for a crop.

WOOL EXPORTATION.—It is the opinion of intelligent persons, who have the means of judging, that within fifteen years from this time, American wool will be as important an article of export as American cotton is now. This opinion is justified by the unprecedented increase of the production for the last ten years: an increase which for the last two or three years has been calculated to be at the rate of twenty per cent. per annum. The amount of wool raised in the United States last year and brought into market, (without reference to that consumed at home,) was estimated at sixty millions of pounds. This year it is probably seventy-five millions; next year it will be ninety. Now, to see how this amount of production compares with that of England. England, we believe, produces one hundred and sixty million pounds per annum, and she cannot be expected to produce much more, as all her grazing lands are now taken up. She imports on the average twenty millions from Germany, and ten from Spain. The United States, then, at their present rate of increase, will soon take the lead in amount, and very probably in quality of production, and with so vast a territory adapted for sheep-grazing, will become the great wool market of the world.

Many years will not pass, probably, before the German system of selling wool at fairs will be adopted in our own wool-growing districts. While wool, as at present, is sold at the farmers' doors to manufacturers and manufacturers' agents, a wide field is spread for speculation, and occasionally for fraud. The farmer, on his remote homestead, cannot possibly have so early or accurate information as the manufacturer, of the changes in the markets. It is impossible for him, at a distance, always to tell with precision what is the fair market price, or whether it is best to sell or hold on. These evils were equally felt abroad, until a remedy was devised. The Leipsic fair, which is the principal one, concentrates all the wool of a district of three or four hundred miles in diameter, and is attended by purchasers, not only from all the European States, but occasionally from this country. The advantage of combination is here enjoyed by the seller as well as the buyer, and every individual can ascertain in a short space, and with the greatest certainty, the highest market value for his wool. The competition on either side is so open and direct, that there is very little opportunity for fraud or mistake.

The small growers would be more benefitted by the establishment of wool fairs than the large ones. In Vermont there are individuals who sold their wool last year for between three and four thousand dollars each; and there is a single township, (that of Orwell in Rutland county,) in which seventy thousand sheep are assessed, and probably a considerably greater number are owned. Wool-growers on such a scale as this can afford the trouble of watching the markets, and the expense of obtaining information; they can even control to a certain extent the markets of their vicinity. The owners of small flocks have none of these advantages, and the average price which they obtain is considerably less than that obtained by the large growers.—[Springfield Mercury, Mass.]

CHINESE MULBERRY.—The Secretary of the H. F. and H. Agricultural Society, in April last, received from Canton, China, some Chinese mulberry seeds, Morus multicaulis, through the agency of gentlemen residing there, and having the privilege of penetrating the interior. The secretary forwarded by letter a few of these seeds to several friends down east, from one of whom an acknowledgment has been made, an extract of which follows: "The Chinese mulberry seed you sent by letter, the last of May, have produced 43 fine plants of Morus multicaulis, which are valued very highly. The tallest is now, (August 23,) over two feet in height. This year have two kinds of worms, one the common, the other on account of yielding the greatest weight of cocoons, and considered the best and most valuable kind among us—(County of Essex.) Both kinds fed alike, and from leaves of the same white mulberry trees. The largest cocoons of each kind were selected and weighed—of the most valuable kind, took 18 to weigh an ounce, and of the common kind took 33 to weigh an ounce. Then took of all sizes without selecting and taken promiscuously, six ounces of each kind. Of the best kind took 183 to weigh six ounces, and of the common kind took 258 to weigh six ounces, being equal to 488 of the best kind to the pound, and 688 of the common kind to the pound."

The letter does not state *how often, how attentively, or how long fed*, but shows the result in feeding different kinds of worms. That the best attention was *not* given to the feeding seems probable, from an examination of the Essex Agricultural Report of 1833, where in one case 208 cocoons, the moth not stifled, being *selected* from 20,000, weighed one pound, being about 13 to the ounce—but on an average took 330 to the pound, and were in feeding 32 to 40 days. The committee in Essex say: "There is no mystery in the culture of silk. The whole process, from rearing the mulberry tree to the production of silk, is simple and easy, and our farmers, by turning their care and attention to this business, would obtain a much more profitable reward than in the usual course of field husbandry."

The following experiment has been made in the county of Hampshire. Two families have fed the same kind of worms upon leaves of the same trees, (white mulberry,) but there was a very different result: while, in one family, the worms produced cocoons of less weight, the other, by superior attention, produced cocoons of a large size and weight. The parcel of worms having superior attention, were 28 days in feeding and winding, and produced cocoons, 230 of which weighed one pound, the moth not being stifled. But the other parcel of worms in the other family, supposed to have less attention, were 35 days in feeding, and required 583 to weigh one pound.

From the foregoing, two important facts are developed, to wit, 1st, That there is a great difference in the quality of worms, although fed alike. 2d, That the same kind of worms, having the *same kind* of food, but superior attention paid to feeding, cleaning, &c., have produced more than double, yes more than 150 per cent. in favor of superior attention to the worms. The usual mode of feeding worms is to keep them on shelves or tables; to clean them from the offal, it becomes necessary to remove the worms to another place upon mulberry leaves. But a better mode has been adopted by the family mentioned in the second fact. In this family the worms are placed on netting, and there fed without the necessity of a removal. The offal falling upon a paper screen beneath, and easily removed without molesting the worms, and when ready to rise for winding, elevate themselves upon and behind another netting near the wall, but connected with the netting whereon they were fed, affording a pleasant sight, being distributed upon the meshes: the whole paraphernalia of bushes are rendered unnecessary, the cocoons more easily separated, and less waste of silk. S.—[Northampton Courier.]

CULTIVATION OF MADDER.—Mr. Tucker: There are consumed in the counties of Oneida and Oswego, by three manufacturing establishments, about two hundred and thirty-four thousand pounds of Madder every three years. The article is dug from the ground once in three years. Suppose each acre produced from 1500 to 2000 lbs., but say the former, on a common soil, it would require 156 acres of land to produce madder for these establishments; and perhaps the remaining manufactories, cloth dressers and families, use half as much more, making in the whole 351,000 lbs., which at 15 cents per lb., the average price of best Dutch madder for the last twelve years, is over $50,000. What a large sum to send to foreign countries, for an article which can be cultivated here as well as potatoes! I am well aware that less than 156 acres will produce the above amount; as, according to the quality of the land and cultivation, it will produce from 1500 to 2000 lbs. of dry madder. I think it would produce 2000 lbs. on land that will yield in a good year 50 bushels of corn to the acre. The whole cost of cultivation on rich deep loam, say sandy loam, digging, washing, drying, grinding, rent of land, seed, and interest of money, at 2000 lbs. to the acre, will not exceed 7 cents per lb. There are without doubt, on most farms in these counties, a few acres of land at least suitable for the cultivation of this article. I consider that the demand will be for years unlimited; as there is not as yet, in the circle of my acquaintance, more than twenty-five acres under cultivation, nine of which are under my management. The price of American madder, for the three past years, has averaged about 23 cents, wholesale. The time for digging, as also for selling the top roots, or seed, is from the 15th of September to the 15th of October; the price at this time is $3 per bushel, by the quantity. These top

roots are buried in the fall like potatoes, and planted the following spring in drills, six feet apart between the drills, (giving room for a crop of potatoes the first year,) and 12 or 18 inches apart in the drills. It is better to purchase the seed in the fall, as it will bear transportation much better when the buds are not much started,—and the price is considerably lower. The bottom roots are also dug at this time, and washed, (or rinsed, if dug from a light soil,) dried, &c. I have, of three years old roots, unengaged, 150 bushels, or enough to plant from 23 to 25 acres.

Mr. James Eaton, of Winfield, Herkimer co., is a successful cultivator and an honorable dealer in the article. There are others also, so that applicants can be supplied to a considerable amount. For more particular information, as to the cultivation of madder, see "Phinney's Calendar, or Western Almanac, for 1834,"—also a communication in the Cultivator for August, in which is stated my success in the cultivation of this root for two or three years past.

As it is not the intention of the subscriber to offer any remarks to the public but what he believes are founded in truth, he respectfully invites editors of newspapers devoted to agriculture and manufactures, to copy some portion of the above into their respective papers—also other editors who may consider the subject important to the public.

A small package of ground madder will be sent, on application, to the care of the President or Committee of any Agricultural Society in the state, previous to their annual fair, for the inspection of members interested.

RUSSEL BRONSON.

Bridgewater, Oneida co., Sept. 1, 1834.

RIBBON GRASS.—The ribbon grass of our gardens, *Phalaris americana*, is likely to become of great value in our husbandry; it has been found to be better adapted to wet boggy grounds than any other species of grass; to propagate rapidly, either by its seeds or by its roots; to yield a very large product in hay or pasture, and to be well adapted to farm stock. The first suggestion of this fact came to us in a letter from Abedn. Robinson, of Portsmouth, N. H., who says the discovery was accidental.

"A neighbor," he says, "wishing to get rid of some of the roots which encumbered his garden, threw them into a bog, where they took root, and spread over a large space of ground, excluding every other plant. The water flows through the roots at all seasons. The turf has become so solid as to bear a cart and oxen. I walked through this grass when in bloom, and never beheld a more handsome and luxuriant growth. It stood perfectly erect, full of large leaves, even, and from four to five feet high. It will produce two good crops in a season, and springs up immediately after the scythe. It produces excellent food; cattle feed it close, and appear to be more fond of it when made into hay than any other grass. I have spoken for one half of the roots of the patch, and have ground ploughed in my meadow in which I intend to transplant them, at about the distance of corn hills."

On a recent visit from the Hon. E. Goodrich, of Hartford, we were happy to receive, from that gentleman, a confirmation of the good opinion of the Phalaris which had been induced by Mr. Robinson's letter. It has been found as beneficial in Connecticut as in New-Hampshire. Not recollecting the particulars narrated, we would beg of Mr. Goodrich, when he sees this, to forward them to us, in order that we may publish them correctly. The subject merits further attention; and if our anticipations are not irrationally founded, the Phalaris americana will yet become the gama grass of the north. It is truly perennial, spreads rapidly, and may be inoculated in the manner suggested by Mr. Robinson, especially in a soil saturated with water, with great facility, and at trifling expense.—[Cultivator.]

STEAMED FOOD—EXPERIMENTS ON GAMA GRASS.—Among the different experiments I have made for the purpose of ascertaining, fully and correctly, the various modes in which the gama grass may be advantageously used in feeding cattle, and for which purpose it seems to me admirably calculated, I have been much gratified with one, on which I stumbled, and the result of which may be worth communicating.

Having been in early life much accustomed to, and a close observer of Pennsylvania farming, I was much pleased with the German economy of increasing forage for their cattle, by the aid of art, in *mixing* food—they being assured that the process adds to the capacity of each ingredient, for furnishing nutritive properties.

This theory they put in practice throughout many parts of the state, in their mode of putting up *green clover*, as a forage for milch cows during the winter; not only preserving, as they believe, in a superior manner the fine qualities of the clover, but augmenting equally the quantity of forage. As fast as the clover is cut, they stack it, mixing equal quantities of well preserved straw, and a small portion of *salt*, sprinkled regularly over the clover as the layers are completed. The gratification with which the cattle appeared to feed on this preparation throughout the winter, I early noticed, especially when it was cut up in the box, and served out to them in troughs—one tin pint cup full of rye, or Indian meal, seasoning the food of a day, when confined to their stalls.

I once had the pleasure of witnessing an experiment made by an intelligent German farmer, to ascertain the advantage of steaming this preparation, before feeding, and was much pleased with the result. The milk evidently was increased twenty-five per cent., and the capacity of the food for giving out its nutritive qualities almost the same.

A recollection of this fact induced me to endeavor to imitate the course of the intelligent German; and commencing the last July, I built up a considerable stack, of equal quantities of *gama grass* and *wheat straw*, in thin layers, taking the grass from the scythe, and on each layer of grass, as I built my pile, sprinkling a little salt (ground alum;) straw; then grass and salt. The straw was in a state of perfect preservation. The stack was built in the old Pennsylvania barrack fashion, a good thatched roof, moving up and down, as required, on fixed posts.

On the 1st of December, I found the preparation sweet and in fine preservation, and commenced feeding four favorite milch cows, in a trough, under an open shed in my "dung stead." This shed was protected on the north and west. The preparation I cut up in a patent cutting box, to about one inch—this was the work of *rainy days*, two hands cutting several hundred bushels per day; as cut, it was packed closely away in a small apartment in my cutting room, to be used as required. On taking the clover from the stack, or barrack, it gave out a fine flavor, resembling that discoverable on opening a stack of well preserved corn blades. This I wished to preserve as much as possible, believing it to add to the gratification of the animals while eating it, for I found that after my cattle were accustomed to the preparation, on going up to a bundle of *straw*, they would smell it strongly, and immediately go in search of another, but never leave that one mingled with the grass.

In the morning, previously ascertaining the quantity requisite to feed on to 12 o'clock, I put it in the troughs, sprinkling it with a liquid (I kept always ready by having two casks,) composed of water and corn meal, in which the vinous fermentation was completed, and the acetous slightly commenced. The result of this feeding, whether as regards economy, or success in supporting cattle in good plight, I am fully satisfied with, and I beg leave to suggest the trial to all those who are now cultivating this grass.

I took the wheat straw intentionally, knowing that straw was held in the least estimation by cattle raisers—I shall hereafter subject all my straw to the same process. I made a little of the preparation with rice straw, a grain we raise with admirable success, on even our pine lands—and some with rye and oat straw. These three last I found my mules eat voraciously, and to eat which, my best fed horses appeared 'nothing loath,' especially that in which the oat straw was combined.

For all my dry cattle, work steers, mules, and horses, I shall cut the grass hereafter at *one month's growth*, say seven cuttings during the season.

I have occasionally observed, that some gentlemen feel doubtful, in spite of the hundred testimonies that have been given to the public, respecting the astonishing productiveness of this grass. Having it in a fine state of cultivation, on *pine land*, the soil about as well managed and manured as a good Virginia farmer manures and manages his clover field, I will give the product of a part of a lot of it, during the last year, which was a favorable season with us.

I laid off a piece of ground, one hundred by fifty feet—the plants previously at two feet distance. Cut on the first day of May, and monthly, until the first day of November inclusive. The production averaged *ten and a half pounds* at each cutting, from each plant or root. In the month of June, I sprinkled rotted *cotton seed* over the ground—at each cutting loosened the ground between the plants with a narrow hoe. Previous to planting, I gave the ground a coat of lime. AGRICOLA. Clarke County, Alabama.—[Farmers' Register.]

FEEDING PIGS ON RAW AND STEAMED FOOD.—We take the following report of experiments of feeding pigs on raw and steamed food, by MR. ROBERT WALKER, Ferrygate, Haddington, from the Prize Essays and Transactions of the Highland Society of Scotland.

We put up to feed, on the 4th March, 1833, five pigs on steamed potatoes, and five on raw potatoes, with an allowance of 2½ lbs. of broken barley each lot: the barley, for the steamed lot, being steamed along with the potatoes. They were allowed the same quantity of potatoes, but, from the circumstances of their being, when put up, only 2½ months old, and from the same brood, we were not able to keep so accurate an account of the quantity of potatoes consumed, because, as they increased in size, they ate more potatoes.

The following Table will exhibit the improvement in pounds weight.

1833.		Weight in lbs.
March 4.	Live weight of five pigs, on raw food,	108
	Ditto of 5 ditto, steamed food,	106
	Difference in favor of raw food,	2
" 19.	Live weight of five pigs, on steamed food,	114
	Ditto of 5 ditto, on raw food,	111
	Difference in favor of steamed food,	3
" 30.	Live weight of 5 pigs, on steamed food,	137
	Ditto of 5 ditto, on raw food,	123½
	Difference in favor of steamed food,	13½
May 1.	Live weight of 5 pigs, on steamed food,	205
	Ditto of 5 ditto, on raw food,	176
	Difference in favor of steamed food,	30

June 1. Live weight of 5 pigs, on steamed food, . . . 279
Ditto of 5 ditto, on raw food, 223

Total difference in favor of steamed food, ... 56

In the three months, the pigs on steamed food have increased 173 lbs., being 67 lbs. more than double; while those on raw food have only increased 115 lbs., being 7 lbs. more than double their first weight, so that there can be very little doubt that steamed food is more profitable for feeding pigs than raw food. In fact, the reporter does not think it possible to make pigs fat on raw potatoes, without other food, when confined to them alone.

THE VALUE OF LIME AS MANURE IN PENNSYLVANIA.—I send you herewith enclosed, an extract of a letter written by a friend, in answer to some inquiries made by myself with a view to obtaining correct information on the use of lime as a manure in Pennsylvania; and the mode of farming, rotation of crops, &c. Should you deem them worthy a place in your paper, or as adding any thing to the interests of agriculture, they are at your service.

COLLIER H. MINGE.

Charles City County, July 22, 1834.

In Virginia, the object of farmers is grain—in Pennsylvania, grass and grazing. Your courses of crops in Virginia succeed each other every three years—in Pennsylvania every six or seven years. By feeding cattle we improve our land—by ploughing, we reduce it. There is no land of mine that would stand your mode of cropping—which causes me to think that your land must be of the first quality, if properly managed. The use of the plough I admit, but object to the abuse of it, which is when you plough up more land than you manure, to gain five per cent. on the quantity ploughed up.

But to answer your inquiries. My farm east of the turnpike road contained 100 acres, of which about 85 were cleared land. This, when I purchased it, would not have produced more than fifteen bushels of corn per acre. If I should now say that it would produce forty-five bushels per acre, I think myself as near the truth as fifteen bushels when first purchased. Now for the mode of improvement. Lime was my dependence. In the first place, fifty bushels per acre was applied on the grass, to lie over the winter, or to be ploughed up in the fall for corn. In the spring, before planting, fifty bushels more on the other side, making one hundred bushels of lime per acre. Now this field will be sowed in oats or barley. I now view my manure, to see how far it will go to give twenty bushels of wheat per acre in a fair season: if it will not go over the whole, I sow the remainder with grass seeds, like the rest, (clover and timothy,) say four quarts of timothy and six quarts of clover per acre. This land remains in grass until the remainder of the cleared land is all limed at the rate of sixty or one hundred bushels per acre, and cultivated in the same manner. I now come to the place of beginning, when fifty bushels more of lime is added—the rule the same as above, respecting manure and grass seeds. I proceed on in this way until two hundred bushels of lime per acre are on. This tract of land, which I have just described to you, I graze—and cultivate only as much as will pay the laboring expenses. It has fed for five years past thirty head of cattle, of six hundred pounds weight, which has given twenty-two dollars per head. All the corn and oats that are raised on it are fed away to the cattle, and thus the manure is made very valuable. This method of feeding my offal grain is the same on the farm I live on. I sell my wheat and barley, and dispose of the other with my cattle, which in common I think the best market I can get.

I will now pass on to my experiment of improving land with lime alone, without the assistance of manure. I purchased a lot of land containing thirty acres, twenty of which was cleared, and had been thrown open as a common for some years, not worth making one hundred and fifty rails to enclose it, which with the rails on it made a reasonable fence. To test the quality of this land I had five acres ploughed and planted with corn. It did not produce me five bushels of good corn per acre. It being one mile and a half from my farm, no manure was drawn to it except about four bushels, to put into a gulley to stop its washing. I sowed these five acres in oats and clover seed, but they were like the corn, not worth half the labor bestowed on them. I now commenced and put on the twenty acres one thousand bushels of lime, suffering it to lie on the surface four years. I put on it occasionally sheep, calves, &c. The fifth year I layed on one thousand bushels more lime, making one hundred to the acre, all lying on the top of the ground. This was not fair play: it should have been ploughed each time, and well mixed. The seventh year I was applied to by a farmer convenient, to cultivate it on shares; he voluntarily offered me one-half the produce, delivered on my home farm. The produce was thirty-three bushels per acre, in corn. It was now sowed in oats, and produced forty bushels. With the oats, clover seed and timothy were sown, as usual. It was now pastured four or five summers, and one thousand bushels more lime was added, making one hundred and fifty bushels per acre. I now cultivated it myself, and the produce was forty-five bushels per acre in corn—oats and clover seed following: four years after this ploughing I laid on one thousand bushels more lime, making two hundred bushels per acre.

First cost per acre, ...	$14
Two hundred bushels lime at 16½ cents,	33
And two tons plaster at $10 per ton,	20

This land has given me for the last five years good six per cent. interest on the whole cost per acre.

In this experiment I have varied from my home method of farming, in respect to feeding my grain on the land. Not one bushel of grain was fed on it. One crop of corn was husked on the stalks, and cattle turned in to eat the remainder; the stalks were all drawn off, as was all oat straw made. Thus the oats and corn now taken off amount to more than one hundred bushels per acre.

I saw your account of marling expenses—you can improve your land much cheaper than I can, if your marl is as desirable as that specimen I gave you.* It must be fifteen years since I had some of that drawn out, and its good effects now are as plain as they were the first year.—[Farmers' Register.]

EXPERIMENT ON THE CULTURE OF POTATOES.—The following is from the Transactions of the Highland Society of Scotland.

It will be objected to the system of planting large potatoes, that if we gain a greater weight of produce, we have previously put a greater weight of plants into the ground. But the additional weight of the plants bears only a small proportion to the additional produce; had it been otherwise, I should not have deemed the experiment worth reporting. The fact is, that the additional produce, when large tubers are exclusively chosen for planting, may amount to two or three times the whole weight of the plants.

I have been enabled to turn the result of the above experiment to account, in extending to culture in the field an early variety of the potato, which I got in 1826.

In that year I purchased for trial small quantities of several varieties of potatoes, recommended each for some particular quality, and announced for sale by a seedsman. I did not find any of these worthy of being continued in cultivation, excepting an early one, with which I got no name. It ripens about a month before the white kidney, has a very good flavor for the table, and preserves its good qualities after being pitted through the winter, a thing not common in early varieties. Its imperfections, when I first got it, were, that the tubers were small, and weight of crop inferior, which, although not making it objectionable as an early garden potato for the table, unfitted it for field culture for the cattle.

As in this country (upper district of Aberdeenshire) our common field varieties of the potato are liable to have their tops smitten by incidental hoar-frosts in the months of August and September, before they are fully ripened, and thus to be much deteriorated in quality, and often rendered deficient in quantity, it occurred to me, that it might be an object worth attaining, to increase the size and produce of this early potato, by the means indicated by the above experiments; when, if this could be done, we should have a good keeping potato adapted for field culture, and ripening early enough to escape the frost.

By a careful selection of only the largest tubers for plants, for a succession of years, this object has now been satisfactorily accomplished; and for the last two years the half of my field potatoes, raised for the cattle and poultry, has been of this variety, and has given a weight of produce, ripening very early, scarcely, if at all, inferior to that of any other variety formerly in cultivation in this neighborhood.

Alford, September 26th, 1833.

NOTICE OF THE CULTURE OF THE POTATO IN FRANCE; in a note to the Editor, dated June 27, 1834, from Mr. Wm. Foster, of Boston, then in New-Haven.—In 1796, living in a part of France where potatoes were but little known, and less used, as food for man, and having obtained some Irish seed, I gave them to a country gentleman, at whose castle I was then residing, to plant. He asked me what soil was the most suitable. I informed him, that on that subject there were various opinions, but that I had known very good crops, and of good quality, raised on moist ground. He told me that he had one place that was moist enough, being nothing but bog and water, and another dry enough, being but sand or gravel, and that he was willing to make the sacrifice of these two places for the experiment, since the seed cost him nothing; at the same time saying that he was not partial to Englishmen or potatoes, and reciting the following lines:

Si vous allez en Angleterre,
Il faut louer jusqu'aux pommes de terre;
Mais, gardez vous de dire que Paris soit plus grande que Londres,
Ou, ils seroient gens a vous tondre.

By the side of the morass there was a gravel hill, without a sign of vegetable earth in it. The morass was then frozen so as to bear our weight. I proposed to him, (or he to me, I do not remember which,) to imitate the process which one of the children had adopted for his spring garden, in the house; which was, sowing seeds in tow, floated on water, and to use the dry gravel in the place of the tow, as a mere receptacle, to hold the potatoes for vegetation. The plan was adopted; many wheelbarrow loads of gravel were placed at proper distances on the bog, and the potatoes planted therein, under my direction. The result was a very early crop of excellent potatoes, farinaceous and large; and the same process was continued for years after, occasionally adding a little gravel, when a part of the first deposit had sunk into the morass. The potatoes planted on the dry gravel produced a few plants and bulbs, of a very bad quality. Their producing any thing must have been owing to the dampness of the climate, and the copious dews which proceeded from the vicinity of the morass.

Is it not probable, sir, that in New-England,

* This specimen contained 60 per cent. of carbonate of lime.

where good arable land is not in sufficient quantities for our wants, there are many such morasses, now of no value, which might be made to produce potatoes, and perhaps other useful vegetable food? The experiment seems to be worth trying.

I will further remark, that this aquatic potato patch had no hoeing or other labor bestowed on it; a matter of some importance in our country, where labor is so dear. Again, the labor of transporting the heaps of gravel may or must be done in the winter, when the time of the farmer is less valuable.—[Silliman's Journal.]

The Potato.—The Tropoleum esculentum, and the Chenopodeum guinoa, the Mexicans and Peruvians preserve for a number of years by destroying their powers of germination, by exposure to frosts, and afterwards drying them, a practice which Humboldt thinks might be followed with advantage in Europe. He recommends obtaining the seeds of the potato cultivated at Quito and Santa Fe, which are a foot in diameter, and superior in quality to those in the old Continent. — [Humboldt's Travels in America.]

Preserving Potatoes.—A writer in the N. E. Farmer gives the following directions for securing potatoes: "When the potatoes are ripe in the fall, that is, when the vines are dead, I dig them and put them into a pit, dug on a knoll, with a trench two feet deep, leading from the pit out, in which I place a common pump log, with the end to the edge of the hole. After placing boards over the hole, cover the whole with a thickness of earth sufficient to prevent the frost from reaching them. In this way any quantity can be put together without any danger of their heating. Care should be taken to prevent the mice from getting to the hole thro' the log, by nailing a piece of tin with holes punched in it at the outer end."

Preserving Ruta Baga.—The following is Judge Buel's method of preserving the Ruta Baga, as given in a former volume: "To *secure for winter*, pits are made in the field, upon dry ground, two and a half feet broad, and as long as may be convenient, and of two to four feet in depth. These are filled, and the roots piled above the surface, in a roof-like form, till they terminate in a ridge. A slight covering of straw is then given, and the whole covered with earth, two feet or more in depth. A salutary precaution is then to make holes, with a bar, at intervals of three or four feet, upon the ridge, through the covering, that the rarified air which will be generated may escape. This may be partially closed with a wisp of straw. Another precaution is to cover the mound with a coat of yard manure early in December, the better to exclude the frost."

To preserve Pumpkins through the Winter and Spring.—When taken from the vine, open them, and throw away the soft contents which are found in their inside. Then cut them into small pieces, and dry them in the sun, or in an oven. Preserve them in a dry place. They may be either pounded or boiled before they are used.

Prepared in this manner, they make a cheap and excellent food for cattle, horses, and hogs. Many thousand pounds might be saved in grain to our farmers, and to our country, by the general use of this wholesome and nourishing food for domestic animals. They afford more nourishment than the potato or scarcity-root; they are cultivated with less trouble, and yield a much larger increase from the same labor.—[Southern Planter.],

---

Salt for Corn.—It is said that salt and water sprinkled over corn will prevent injury from the weevil.

Grapes.—Almost the only grapes that have been in market this fall have been the Isabella and Catawba, but principally the former. These have commanded, in quantities, eight and ten cents per pound; while the Catawba have brought twelve cents, and, by retail, eighteen and three quarter cents. Both of these are certainly, when fully ripe, very superior table grapes. Dr. Underhill sent us some very excellent Isabellas from his vine-yard at Croton Point. His vines have borne abundantly, and ripen them well.

Loubat's Vineyard. — This vineyard, on which a large amount of money has been expended in foreign vines, was recently sold for the purpose of being divided into lots for cottage residences. It is 6 miles from Brooklyn, lying on New-York Bay. There are upwards of 40 acres, which were sold for $15,300. The vines were, we presume, considered of little or no account, and thus has ended the last extensive experiment in attempting to acclimate the foreign vine in this country.

Improvement of Agricultural Plants.—If farmers would pay as much attention to the improvement of their seeds as horticulturists have to their fruit, the science of farming would assume still higher importance. The following is an extract from an article by Patrick Shirreff, Esq.

To Messrs. Drummond, Managers of the Stirling Agricultural Exhibition.

Gentlemen, — Having experienced much gratification on visiting your Exhibition Rooms on the 30th of November last, I venture to obtrude on your notice a few observations regarding the improvement of agricultural plants.

The world is said to be an immense manufactory, and the justness of the remark may be illustrated by the details of agriculture. The cow yields dairy produce—the wheat plant, the material of bread—and the herbage which forms pastures, either nourishes the cow or wheat plant as it is applied. In short, the acres of the farmer constitute his work-shop, animals and plants his machinery. The stately short-horn, and creeping white clover, occupy separate departments, and a union of their results is necessary to certain processes. To both kinds of machinery, man is indebted for many of the necessaries and conveniences of life; but animals must be considered the highest description, plants the most extensively useful. Amidst the variety of nature, the agriculturist selects his machinery, and possesses the power of deteriorating or improving the objects of his choice.

The field for the improvement of agricultural plants may be illustrated by objects in your exhibition. The grains of Morocco wheat from the Edinburgh Experimental Gardens are about twice the size of those commonly cultivated in this country. The ear in glass, of Mungoswells' group, contains three times the number of grains; and flour, from Talavera species, in the same collection, is ten per cent. superior. By combining the three properties, size, number, and quality, in one variety, the soils at present cropped with wheat might be made to yield upwards of six and a half times their present amount of human food. This is an extreme calculation, but when diminished by calm reflection, enough will remain to delight the philanthropist and engage the attention of those interested in the advancement of agriculture.

The mode of attempting to combine the properties of different varieties into one, is familiar to those conversant with the sexual organs of plants. The ingenious Mr. Knight impregnated the wheat plant, and stated the offspring not to have stood pure by re-production from seed. I hope to be able to illustrate this point, having fifteen wheat plants at present growing from impregnated seeds. No successful scientific attempt seems to have been made to improve agricultural plants, but the results obtained by horticulturists are encouraging to farmers.

A number of cultivated plants produce new varieties, by agency, unknown to man; and the higher the state of cultivation, the more likely are new varieties to appear, which are occasionally superior to the original ones. Indeed, improvement in cultivated plants, as in animals, is progressive by judicious selection and treatment, and a good variety may confidently be regarded as the harbinger of a better. But man cannot, at pleasure, call into existence superior varieties, which may be regarded as the offspring of chance; it is therefore of importance to discriminate and preserve them when they do appear.

The Hopetoun oat exemplifies this. It attracted notice from its height, and was preserved at harvest; but had I not accidentally made a collection of oats a short time before, the original ear of Hopetoun oats would, in all probability, have been destined to tickle the palate of my favorite horse, and thereby lost, perhaps, for ever.

Whatever advantages may result from artificially impregnating agricultural plants, an important field of improvement is known to exist in selecting varieties produced by nature, to which the attention of agriculturists ought to be particularly directed, and the humble ploughboy generally possesses sufficient time and talent to enter on the investigation. As evidence of this description of riches occasionally presented to man, it may be stated that, in the year 1830, I observed minute potato plants in a pheasant cover, not likely to have been produced from cultivated tubers, and it instantly occurred to me the plants must have proceeded from seeds transported by birds. The potatoes, then the size of peas, were preserved, and produced six or seven new varieties, one of which is considered highly valuable.

Manufactured Articles in Schools.—In the Quebec Mercury we find, under the head of Canadian Industry, the subjoined advertisement:

"For sale, at the Schools of Mr. Perrault, St. Lewis' Surbubs, [manufactured by the school boys,] to wit—hay rakes, sowing machines, harrows, ploughs, winter sleighs, machines for carrying hay, hot-bed boxes, laths, flabs, &c.

"Manufactured by the school girls—Carpets, worsted stripes, linens, long and short stockings, gloves, mittens, bonnets, sashes, worsted, cotton and flax suspenders.

"Those who wish to supply the materials, will get agricultural implements manufactured and worsted and hemp carded at moderate prices.

"Quebec, 11th Sept., 1834."

A Cure for Poisoned Sheep.—It is a fact well known to farmers, that sheep are frequently poisoned by eating common laurel, (Kalmia latifolia.) When you suspect this to be the case, give the sick animal a strong tea made of mountain dittany, (Cunila mariana,) moderately warm. This simple remedy has been known to recover sheep in the last stages of the disorder.

It would be well for farmers, whose cattle are in danger of being poisoned, to procure and dry a quantity of dittany in the summer, and keep it by them through the winter, as it is in the latter season they are most likely to be affected. It may also be useful in other disorders incident to cattle. So much for the cure: as a prevention, destroy all the laurel on your farms.—[Mackenzie.]

MOUNT AUBURN.—We shall continue to lay before our readers intelligence on this subject, in the hope that the day is not distant when New-York city will have a suitable resting-place for the dead.

At a meeting of the Massachusetts Horticultural Society, Saturday, September 20, 1834, the Garden and Mount Auburn Cemetery Committee, by their Chairman, (Hon. Judge Story,) presented the following Report, which was read, accepted, and ordered to be printed in those of the city newspapers whose editors may be willing to insert the same.

R. T. PAINE,
Recording Secretary.

The Garden and Cemetery Committee of the Massachusetts Horticultural Society beg leave to submit the following Annual Report for the consideration of the Society:

The committee congratulate the society upon the continued improvement of the garden and cemetery, and the additional favor and encouragement which the design has received from the public. Before proceeding, however, to any particulars respecting this subject, they feel it their duty to make a few remarks, in order to correct some erroneous notions, which pervade certain portions of the community, relative to the nature and objects of the establishment. It is by no means uncommon to find persons impressed with the belief, that the establishment is a private speculation, for the private benefit of the members of the society, or of the individuals who originally advanced the money to purchase the grounds for the garden and cemetery, and that considerable profits have been already realized from it. This notion is utterly unfounded. The cemetery is in the truest and noblest sense a public institution, that is, an institution of which the whole community may obtain the benefit upon easy and equal terms. No individual has any private interest in the establishment beyond what he acquires as the proprietor of a lot in the cemetery; and every man in the community may become a proprietor upon paying the usual sum fixed for the purchase of a lot. The whole grounds are held by the Horticultural Society in trust, for the purposes of a garden and cemetery; and no member thereof as such has any private interest therein, except as a corporator, or proprietor of a lot. The whole funds which have been already realized by the sale of lots have been devoted to paying the price of the original purchase, laying out the grounds, enclosing them with a fence, erecting an entrance gate and portal, and a cottage, and other structures for the accommodation of the superintendent, and defraying the incidental expenses. The expenditures have already amounted, as appears by the treasurer's report, to upwards of twenty-five thousand dollars; and the proceeds of the sales have fallen short of this amount by about two thousand dollars; so that as yet the expenditures have exceeded the income. It has always been the understanding of the Society, that all funds which should be obtained by the sale of lots, should, after defraying the annual expenses of the establishment, be applied exclusively to the preservation, repair, ornament, and permanent improvement of the garden and cemetery, and never to the private emolument of any of the members--and indeed this constituted the fundamental object of those who have become the proprietors of lots. It is due also to the gentlemen whose public spirit matured the design, to state that it was their primary object to exclude all private speculation and interests from the undertaking, and, by a wise and fixed policy, to secure all the funds which should arise from its success to public purposes of an enduring and permanent character. The Society has sanctioned these views. It was believed that a generous community would foster the design, and by a timely liberality in the purchase of lots, would enable the Society to make this beautiful retreat for the Dead at the same time the consolation and just pride of the Living. The committee have great pleasure in stating that these reasonable expectations have not been disappointed. Mount Auburn has already become a place of general resort and interest, as well to strangers as to citizens; and its shades and paths ornamented with monumental structures, of various beauty and elegance, have already given solace and tranquillizing reflections to many an afflicted heart, and awakened a deep moral sensibility in many a pious bosom. The committee look forward with increasing confidence to a steady public patronage, which shall supply all the means necessary for the accomplishment of all the interesting objects of the establishment.

Relying on this patronage, the committee indulge the hope that the period is not far distant when by the sale of the lots the Society will be enabled to enclose all the grounds with a permanent wall, to erect a temple of simple and classical character, in which the service over the dead may be performed by clergymen of every denomination: to add extensively to the beauty and productiveness of the garden; and, above all, to lay the foundation of an accumulating fund, the income of which shall be perpetually devoted to the preservation, embellishment, and improvement of the grounds. The last object the committee deem of the highest importance to the perpetuity of the establishment; and it cannot be contemplated with too much care and earnestness in all the future arrangements of the Society. In addition to these objects the committee would suggest the propriety of making arrangements for the admission of water from Fresh Pond into the ponds of the cemetery, and, after passing through them, of conducting it into Charles River. Such a measure would add to the salubrity of the ponds, as well as improve the general aspect of the whole scenery. It is believed that this measure may be accomplished at a comparatively small expense, whenever the funds of the Society will admit of a suitable appropriation. In the mean time it seems desirable to secure, by some preliminary arrangements, the ultimate success of the project.

The committee would further state, that by the report of the treasurer it appears, that the whole number of lots in the cemetery which have been already sold is 351, viz. 175 lots in 1832, 76 lots in 1833, and 100 lots in 1834; and the aggregate sum produced by these sales is $23,225.72. The whole expenditures incurred during the same years amount to $25,211.88. The balance of cash and other available funds now in the hands of the treasurer is $5,403.32. The committee are of opinion, that reliance may safely be placed upon the future sales of lots to defray the expenses of the current year; and that, therefore, a portion of the funds now on hand may be properly applied to the reduction of the remaining debts due by the Society.

The committee would further state, that since the month of August, 1833, there have been ninety-three interments at Mount Auburn; eighteen tombs have been built, sixteen monuments have been erected, and sixty-eight lots have been turfed and otherwise ornamented. It is understood that other monuments are in progress, and will be erected in a short time.

The committee would further state, that finding the grounds at Mount Auburn were visited by unusual concourses of people on Sundays, and that the injuries done to the grounds and shrubbery were far greater on those occasions than any other, from circumstances which it is unnecessary to mention, they deemed it their duty, as well in reverence for the day, as in reference to the permanent interests of the establishment, and a regard to the feelings of the community, to make a regulation prohibiting any persons, except proprietors and their families, and the persons accompanying them, from entering the grounds on Sundays. The effects of this regulation have been highly beneficial. It has not only given quiet to the neighborhood, and enabled proprietors and their families to visit their lots on Sundays under circumstances of more seclusion, tranquillity, and solemn religious feelings; but it has put a stop to many of the depredations which thoughtless and mischievous persons had been too apt to indulge in, in their recreations on that day. Several other regulations have been made, which experience has shown to be indispensable to the due security and uses of the cemetery. The most important of these is the closing the gates at sunset and opening them at sunrise. And it may be observed of all these regulations, that while they allow a free access to the grounds to all visiters at reasonable times, and in a reasonable manner, they are calculated to prevent any desecration of them under false pretexts, or by secret misconduct.

The committee would further state, that in pursuance of the vote of the society at their last annual meeting, they made application to the legislature of the commonwealth at its last session, for additional provisions to aid the general objects of the Society. The legislature accordingly passed an act, entitled "An act in further addition to an act to incorporate the Massachusetts Horticultural Society," which is entirely satisfactory to the committee. They therefore beg leave to recommend, that the Society should, by a formal vote, accept the same.

All of which is respectfully submitted.

JOSEPH STORY,
Chairman of the Committee.

LUPINELLA SEED.—The following is from the Southern Agriculturist:

Blue-House, August 10, 1834.

SIR,—Allow me to invite inquiry concerning the lupinella seed. Should any experiment have been made with it by any of your subscribers, it would afford me pleasure to read a statement of them in your useful journal, which, perhaps, may contribute to the interest of more than one subscriber.

"The Lupinella—the seed of this most valuable grass has been transmitted to the Secretary of State from Leghorn, and by him to the Governor of Georgia, with the following communication:

"'I have lately received from our Consul at Leghorn, in Italy, a parcel of lupinella seed, which is represented as the finest grass cultivated in that country, for the quantity and richness of the hay, and its fertilizing effects upon the land in which it is cultivated.

"'Three years' cultivation of this grass enriches the poorest land.'" A FARMER.

P. S.—I should like to know where the seed can be procured.

HONEY BEES—*Important Suggestion.*—A respectable farmer of this neighborhood called on us a few days since, for the purpose of inviting us to give publicity to a practice adopted by him for preserving Bees through the winter, which he considers as one of great utility and importance to farmers who produce their own honey. Our informant states that he has kept bees for a number of years, and after pursuing several expedients for the preservation of bees through the cold weather, he last fall placed his hive upon a suitable bench in his cellar, which was perfectly dry, and from which all light was excluded. Upon bringing the hives again into the open air, a few days ago, the bees exhibited an unusual degree of healthiness and activity, and there were but a very small number of dead ones in any of the hives. This experiment is, in our informant's opinion, a very successful one, and well worthy the attention of those farmers who engage in this branch of rural economy. It is at least deserving of a repetition.—[West Chester Herald.]

NATIVE CATTLE.—Having lately observed a new property in the native breed of cattle belonging to Mr. Ralph Haskins, of Roxbury, I am desirous to inquire through the medium of your paper, whether there are any other ones possessing a similar quality.

This milk consists in the remarkable richness of the milk and cream, the latter of which, when separated from the milk for the space of twelve hours, becomes of the consistence of a baked custard, and may be turned upside down without any harm, or spread on like butter. Cream in this state has been repeatedly carried into State street, and gentlemen in the Insurance Offices have churned it, and brought the butter in less than a minute.

Mr. Haskins states that, notwithstanding the richness of the cream, the milk, after it is skum, is much richer than common skim milk, and the cows also give as much as others usually do.

He has received premiums at Brighton for two of them, one of which, we understand, he has lately sold for 150 dollars.

If any of your readers have ever known such an instance before, they would much oblige a subscriber if they would mention it in your paper. S.—[Boston Advocate.]

APPLES. — There has not been such a scarcity of apples in this part of the country since the year 1794. The cold weather in May destroyed almost all the fruit on the hills and in the valleys. Some persons have a few apples and will make a small quantity of cider, but the greater part have hardly enough for apple pies, and will be destitute of cider, apple sauce, and winter apples. So far as we have observed, there are more apples on the trees in the meadows and low lands near Connecticut river, than any where else. We have heard old people make the same remark in regard to apples in 1794.—[Hampshire Gaz.]

TAKING UP THE ROOTS OF THE SCARLET RUNNERS IN AUTUMN, AND REPLANTING THEM IN SPRING.—I have practised this mode of culture for some years. When the frost destroys the leaves and shoots, I take up the roots, keep them in sand through the winter, and replant them in May. They grow stronger, and begin to flower much earlier than beans planted in the common way, and never stop bearing till the frost destroys them. I have not set the plants more than one year, but a friend of mine has a plant six or seven years old, which looks as well now as it did the first year; and he has also a row now in pod, which were not either taken up or covered last winter. N. S. N. Nottingham, July 4, 1834.—[Loudon's Gardeners' Magazine.]

PAINTING HOUSES.—A writer for the New-England Farmer, whose communication was published vol. i, page 314, says, "I believe it is a general practice for people to do their painting some time during the three summer months; but repeated experiments have been made within a few years, which prove that a house painted late in autumn, or in the winter, will hold the paint more than twice as long as one painted in warm weather. The reason is obvious—for when the paints are applied in *cold* weather, the oil with other ingredients form a *hard cement* on the *surface* of the clapboards, which cannot easily be erased; whereas a building painted, (as usual,) in the heat of summer, will soon need a new coat; for the heat causes the *oil* to penetrate into the wood, and leaves the other component parts dry, which will soon crumble off."

JEWETT'S CHEMICAL WATER-PROOF.—Among the superior articles exhibited at the recent Fair of the American Institute was Col. Jewett's water-proof paste. A boot which had been saturated with it had been standing in water three days without being in the least moist on the inside. A lady's slipper was similarly exposed, with the same results. We have tried it on boots and can speak favorably of it, although, as yet, we have made but a partial trial. The information we have given on this subject in former numbers of the New-York Farmer, together with the following subjoined certificate, cannot fail of recommending it to the notice of our readers. Should it prove a desideratum in protecting the feet from wet, it will be of incalculable benefit to the health of all classes, particularly to farmers, who are constantly exposed, most of the year round, to rain, a damp and wet ground, or to dewy grass.

"Executive Office,
"Columbus, Ohio, June 21, 1834.

"Having worn shoes for the past five months, to which Col. Jewett's Chemical Water Proof had been applied, I can from experience recommend it to the community at large, under the impression that all who use it will find it much to their interest and comfort. I immersed one of those shoes under water, which had been saturated, and found that the leather was made perfectly impervious to water and remained soft and pliable. I believe that leather thus saturated will wear longer than it otherwise would, and conceive the paste to be an article of immense value, and its discovery of great importance to the public.

"ROBERT LUCAS,
"Governor of Ohio."

THE MASHANNOCK POTATO.—We received in a letter from a subscriber in Indiana, last week, a small fine looking potato, in which he gives the following account:

"I send you in this letter the celebrated Mashannock Potato of the west. I call it the Mashannock of the west, as it was produced from a seed of the Mercer potato, by an old Irish woman in Columbiana county, Ohio, about the year 1820. This variety spread over the country in 1824 with such rapidity as to reach almost every farm that year. Since that time it has had no rival among the old varieties. It remains in full perfection to the present day. The Mashannock potato greatly resembles the Mercer of Pennsylvania, but is superior to it in every respect. The Mercer potato is shorter and whiter, and I believe the product not more than one-fourth as much. If your farmers have not this kind of potato already, they will do well to try it.

"The Mashannock has vines of a beautiful light yellow color, medium size, soft and spreading. A common potato is six inches long, as thick as a man can span, and flattened in its form. Overgrown ones are much larger, some seasons weighing from two to three pounds, with lumps on the sides. The vines bear a moderate quantity of small seed-balls, and some seasons when the crop is very good the ground is nearly covered with them. These seed-balls make the greatest variety of potatoes, and the most promising kinds of any I have tried. They sport in endless variety of early and late, large and small, and all colors except red. Of one thousand seedlings raised by myself in 1832, not one was red, mostly long shaped and excellent.—[Genesee Farmer.]

CATALPA AND LOCUST.—Gen. Harrison, in a letter to J. Dille, Esq., thus speaks of these trees.

In relation to the Catalpa. It grows below Vincennes, on the bottoms of the Wabash, and some of the tributary streams, to a very large size. I think I have seen it on the Deshe creek, 7 miles from Vincennes, from two and a half to three feet diameter, if not larger. It grows at this place very rapidly, as it does in the lower parts of Virginia; but whether it will attain the size that it does on the Wabash time must determine. If it does I would prefer it to the locust. There is no doubt of its being equal, if not superior, in durability to that timber. And there are objections to the locust which do not apply to the catalpa. The former does not well bear pruning. Cutting off a limb of even an inch in diameter will lay the foundation of a defect in the heart. My neighbor, Judge Matson, informs me that this is invariably the case, and my own experience coincides with his. This may be obviated by great attention to rubbing off the buds which put out from the stem of the tree several times in the summer. The locust is also subject to be attacked by an insect which sometimes destroys all that are in the vicinity of the place where they make their appearance. In cultivating the locust it is necessary to appropriate a piece of ground solely for that purpose. Raising them in or on the edges of your cultivated fields will give you great trouble, from the distance to which they push their roots and the number of sprouts which they throw out whenever they are touched by the plough or hoe.

CEREUS SPECIOSISSIMUS.—In the month of August I take off as many cuttings as I intend to strike, and suspend them by a string in the warmest part of the green-house, leaving them there for about three months. I then pot them in a compost, consisting of equal quantities of leaf mould and peat mould, mixed with one-sixth part of thoroughly rotten dung. The pots I use are 48s. or 60s., according to the size of the cuttings; not more than one being put in each pot. After watering, I set the plants on a shelf in a warm part of the green-house, where they will bloom in the following spring. After the bloom is over, very little water is given for three months, in order to bring the plants into a state of repose. They are then shifted into larger pots, if necessary; but, at all events, some of the old mould is removed, and some rich compost, such as that above described, is added. In this manner I raised a plant in the garden of Robert Searle, Esq., at Lympstone, in Devonshire, between 1827 and 1833, which is now 6 feet high, and 5 feet in circumference. It grows in a round tub about 18 inches in diameter, and 20 inches deep. W. DUNSFORD. Horticultural Society's Garden, Chiswick, April, 1834.—[Loudon.]

GEOLOGICAL SURVEYS.—The Geological Society of Pennsylvania has employed Mr. S. Clenison to visit and report on the gold region recently discovered in York county, in that State. This gentleman has recently returned from Paris, where he has served a long and faithful apprenticeship in the school of mines. The Legislature of Tennessee has recently appointed Dr. G. Troost to make a similar survey of the State. Professor Hitchcock has completed his geological survey of the State of Massachusetts. Professor Ducatel is appointed by the Legislature of Maryland to make a geological and topographical survey of that State. Mr. G. W. Featherstonhaugh is engaged under the authority of the United States in a geological and mineralogical investigation of the territory of the Arkansas: his report is expected to be made to Congress in February next. These various and simultaneous appointments evince a determination to develope the mineral resources of the country in good earnest.—[New-York Enquirer.]

HORSE POWER.—We have seen a model for a portable horse power of great simplicity and effect in producing the rapid motion required for thrashing mills. It was invented by Mr. Kellee, the Chief Machinist in the Patent Office of the United States. It can be examined at the office of the American Institute, 41 Courtlandt street. By the application of an endless screw the desideratum is obtained with the least possible gearing or complication of wheels. It has been effectually tried, and proved to answer the purpose.

VERTICAL WOOL SPINNER; William Sykes and George M. Conradt, Fredericktown, Frederick county, Maryland, March 10.—The novelty claimed in this machine consists in the mode of drawing the thread. The slubbing is put on to a roller in the usual way, and is conducted down to the spindles on the lower part of the machine; in descending it passes between two segment rollers, that is, rollers which have opposite sides flattened, so as to remove about half of their touching surface; the roving in descending is embraced, alternately, between the two cylindrical parts. Similar rollers are placed a few inches below these, embracing the thread at the time it is free in the upper rollers; "and thus the operation of a continued drawing is performed, and at the same time the flyers give it the requisite twist. If hard twisted yarn is required, the pairs of rollers are placed nearer together; for loose yarn, further apart." The claim is confined to this part of the structure.—[Journal of the Franklin Insttute.]

SELF-SHARPENING PLOUGH SHARE; Richard B. Chenoweth, city of Baltimore, state of Maryland, March 17.—The improvement is said to consist in the form of the share, and the manner of fastening it to the mould-board; it is stated, that the same mode of fastening was claimed by the patentee in a former patent, but without a share which admitted of a reversed application; in the present instance the share embraces both the share and point in one, and is so made as to be capable of being reversed or turned over; when the wear produces the proper sharpening for reversing again. The share being properly fitted to the mould-board, one bolt in the middle secures it in its place. The patentee claims "the form of the share, as embracing both share and points, and susceptible of a reverse application, and self-sharpening by the reversion of such application; with the manner of fastening the share on the mould-board."

As this mode of fastening has been previously claimed, it is not a legal subject of claim in the present patent, and would certainly vitiate it. The self-sharpening by reversion has been claimed by more than one patentee, and cannot now be sustained abstractedly, although it might possibly stand as applied to a new and improved form of share.—[Ib.]

NEW FIBROUS MATERIAL TO BE USED IN MANUFACTURES; Margaret Gerrish, Salem, Essex county, Massachusetts, March 27.—The new material designated as the subject of this patent is obtained from the cortex of the *asclepias syriaca*, known under the common name of *silk weed*, or *milk weed*, and *Syrian swallow wort*, a native of the United States. The description of it in Dr. Bigelow's "Florula Bostoniensis," and in other works, is alluded to in the specification. The mode of obtaining the fibres, recommended by the patentee, is to take the stems, divide the bark longitudinally into 4 parts, and strip it off, which may be effected with much facility. On making a partial transverse section and bending the bark, the glossy silk-like fibres make their appearance, and may be drawn out in lengths of from two to three feet. After the necessary preparation, these fibres may be spun, colored, and used as other fibrous materials. The specification contains a good deal of matter which may be considered as altogether extraneous in such an instrument, as it has nothing to do with the security of the patent; we therefore pass this part over, having stated the object of the patent, which is simply to secure the right to the introduction of the substance designated as a new material for the manufacture of thread, cloth, and other similar fabrics.—[Ib.]

TIMBER MORE DURABLE WITH THE TOP END DOWNWARDS.—Our correspondent, Daniel Longstreth, in a letter to us, says that he has lately been informed by a miller in that neighborhood, that penstocks, and other timbers exposed to wet or dampness near the water-wheel, are placed by the mill-wrights with the top end downward, as they are found to be more durable than when erected in a different position. We hope that observations with regard to this matter may be multiplied; and that the difference in value between the two methods may be more accurately determined.—[Gen. Farmer.]

A CURIOUS PIECE OF MACHINERY TO MEASURE TIME has been invented by Mr. Andrew Symington, watch-maker, in Kettle. This time-piece is much more simple in its construction than the common eight-day clock, requires only to be wound up once in twelve months, and being quite silent in its movements will be admirably adapted for bedrooms. In this time-piece the pendulum and scapement are done away with, and a simple but efficient substitute is applied to the crown wheel, as in detents, which only allows it to revolve once in an hour, and has quite an uniform motion, without producing the smallest vibration in the machinery. Another important part of the discovery is a particular material for the pivots to move in, which is quite free from any cohesive quality, and requires no oil, therefore avoiding the irregular motion produced by the evaporation of the oil and other causes. Mr. Symington is about to construct a clock on this plan, to be sent to London, for the purpose of being exhibited there.—[Fife Herald.]

The Mr. Symington here mentioned is a son of the late eminent William Symington, the father of modern steam navigation.—[London Mechanics' Magazine.]

HYDRAULIC CEMENT.—Mr. J. Parker, the inventor of the Hydraulic Cement, an article designed for the construction of water cisterns, cellar walls, &c. has sent to this office a specimen of his cement, together with an account of its peculiar utility. The specimen, which Mr. P. informs us was in soft mortar on the 4th of July, appears like real stone, strong and solid, with the color of common lime mortar. Cisterns are made from this cement without stone, brick, or wood, bedded in the earth, and when finished they are firm and durable, and well calculated to keep water in a pure state. Mr. Parker, who resides at Lodi, desires us to say that he purposes to send on a builder to this city in a few days.—[Gen. Far.]

COPPER IN VEGETABLES.—Some experiments recently made by M. Farzeau in France, have demonstrated the presence of this metal in the vegetables used as food. These experiments have been made with so much accuracy as to demonstrate the actual weight of copper in each plant. The examination shows the proportion to be a few miligrammes of copper to each kilogramme of the plant. Wheat contains 4,666 miligrammes of copper for the kilogramme, flour only 0.666, but the copper is contained in the bran and not in the farinaceous portion, so that the bread made with the coarsest flour is that which contains the largest proportion of the metal. M. Farzeau, indefatigable in his researches, wished to ascertain the quantity of copper which in a given time a man would mix with his bread. According to his calculation a man would eat in the course of fifty years, 6.09 grammes—a very small quantity, in truth, and which could produce no injury. The quantity of bread daily produced in France being 18,000,000 of kilogrammes, there would be consequently 10 kilogrammes of copper eaten daily, or 3650 per year. On the other hand, since the amount of wheat necessary to feed France for a year is nearly 7,600,000,000 of kilogrammes, it results that this quantity of wheat takes from the soil 34,961 kilogrammes 800 grammes of copper—an enormous quantity—which equally proves the abundance of copper in the soil, and its minuteness of division.—[Boston Medical Journal.]

PRESERVING BACON.—Among the best flavored dishes that grace the bounteous tables of this country, bacon or ham ranks, if not the first, certainly inferior to none.

To make good bacon the meat should be hung with the thickest part upwards, to prevent the exudation of its juices, and each piece clear of the wall, or other pieces, and there left until it is quite dry. Some sound chips, with a few billets of hickory wood or corn cobs, make the best smoke, and also keep the house warm, which is important; for if the smoke-house is cold, all former care will be in some measure lost, a damp will settle on the bacon, and it will have a bitter flavor. Bacon should never be smoked in damp weather, as is too often practised, as by it the meat gains nothing in color, but acquires a bad taste; one or two good fires each day will smoke the pieces, in precisely the same time required for salting, that is to say, hams four weeks, shoulders three weeks, and middlings and other pieces two weeks.

I have used red pepper, with, I think, decided advantage, by throwing a few pods into each fire while smoking; this article, in salting or smoking, or in both, improves the flavor of the meat, and tends to secure it against insects. If the meat-house is dark and cool, the meat may be left hanging until wanted for use; but if otherwise, it should be taken down at the commencement of warm weather, and packed away in salt, clean hickory ashes, or oats; either will secure it from insects or dripping, if the meat is entirely covered over, and the interstices between the pieces properly filled. The use of dry salt will not increase the saline flavor of the meat. I have known bacon very finely preserved by preparing a strong ley of wood ashes, concentrated by boiling, into which, when cold, the pieces were dipt.

The alkali and the oil of the meat form a coating of soap in all the crevices, as well as on the surface, which is an admirable protection against the insect tribe.

Some attention should be paid to the construction of the smoke-house. As before observed, it should be rendered warm during the process of smoking, and if it is to retain the meat through the season, should be cool, dry, and dark. A brick stove in the centre of the floor, with openings for the escape and ascent of the smoke in the sides, is among the best contrivances usual amongst us; but this becomes heated, and does not entirely obviate the danger arising from the occasional falling of the meat, by which houses are not unfrequently burned. It will probably be more safe and convenient to build a chimney with a very low fire-place, as for a sitting room, and when the chimney is carried up four feet, closed at the top. A small grate, placed a few inches from the hearth, will assist the burning of the wood. By having a chimney thus constructed, the blaze of the fire can never injure the house or meat; no pieces can fall into the fire when a nail or string gives way, and whilst the blaze and smoke ascends the blind chimney, the smoke must descend again and pour into the smoke-house. This plan is highly recommended for its safety and convenience, by a gentleman whose advice is entitled to great respect, and to whom I was originally indebted for several of the directions here given, the value of which I have verified in the course of my own experience. AN ADMIRER OF GOOD BACON.—[New-England Farmer.]

We insert the following article, lengthy as it is, because it appears to us to embody the leading principles, and many of the important practical directions, of the veterinary's calling. The article is from the Edinburgh Quarterly Journal of Agriculture.

The Principles which regulate the Treatment of Simple Wounds, considered with reference to Veterinary Practice. By CHARLES WILSON, M. D., &c., Physician to the Kelso Dispensary.

There is no subject a knowledge of which is more extensively required, and yet more sparingly disseminated, than that of the right method of treating wounds occurring to the lower animals. It might have been expected that the instructions of the able leading professors of the veterinary art would have had some considerable effect in directing the practice of their inferiors and their disciples; yet it does not admit of denial, that every day instances occur of the most extreme ignorance and mismanagement in the cure of those ordinary accidents, the daily occurrence of which ought to point them out as objects deserving the minutest study and attention. It is true, that many of these accidents are of so trifling a description, that nature is easily enabled to effect a cure, either with the aid of the farrier, or in spite of him: but there are others in which his misdirected efforts are often productive of the most hurtful effects, and it requires little experience, in such matters, to discover instances in which some noble and useful animal, whose unimpaired powers a scientific application of remedies might have preserved, has been consigned by ignorance to the kennel, or, at the best, has become the maimed tenant of the paddock, for the remainder of a painful existence.

Yet it would be unjust were we to throw upon the veterinary practitioner the discredit of having first suggested the worse than inefficient plans of treatment, of which there is so often reason to complain. It must be confessed, that nearly all his notions of practice on the subject have been borrowed from human surgery, as it existed at a remote period, before it had undergone that process of depuration which has since raised it almost to the level of the exact sciences. His fault has been that of remaining contented with such knowledge as was first proffered to him, thus failing to keep pace with the march of that science which he had necessarily assumed as his guide. It seemed, in truth, to be the main object of the earlier of the modern writers on surgery to give dignity to their art, by involving every subject in the greatest possible number of difficulties, making each a theme for a host of nice distinctions, founded upon any thing but sound views of the healthy or diseased actions of the human frame; by combining their remedies in such a way as to render it frequently impossible to detect their precise results; and by loading their "armamentum" with a variety of unwieldy and complicated instruments, better adapted for entrapping the admiration of the ignorant, than for affording real assistance in the cure of disease. The treatment of wounds suffered, in an especial manner, from the now disused doctrine of the humors; the alleged changes of which, in point of quantity and quality, and the variations even in the form of their component particles, such as it was imagined might take place, from round to angular, &c., were held to perform a considerable part in all cases of diseased or irregular action. Hence arose the supposed necessity of softening, breaking down, concocting, and digesting these humors, in cases of external injuries, to effect which the sanative powers of nature were too often interrupted and set aside, and the process of cure by the first intention in many instances neglected, in order that recourse might be had to a strange medley of applications, the greater number of which modern science has at length wisely rejected. But we have only to turn to the common works on the veterinary art, or, still better, to watch the practice of the village farrier, to discover, that, although many of the mistaken physiological notions on which the ancient plan of cure was founded, have fallen into neglect, yet still the practice itself has been retained, and is now followed, in the purest spirit of empiricism, by those who neither know its origin, nor understand its aims. If the succeeding observations shall be found to have any tendency to diffuse more correct notions with regard to the management of the common class of accidents to which they refer, the object of the writer will be fully accomplished.

The importance and danger of wounds, of course, vary according to the nature of the parts involved. If the skin and cellular substance only be injured, the recovery is generally easy and prompt. Division of the muscular fibres, with the necessary concomitant of lesion of the smaller arteries and nervous trunks, may oppose more obstacles to the cure, but neither are these often of a serious description. But should any of the greater arterial or venous trunks be opened, any of the cavities of the body be penetrated, or the internal organs share in the injury, a wound must be considered as presenting tokens of immediate and extreme risk. One of the results of every wound, unless where it affects a part not naturally endowed with sensibility, as the horny crust of the hoof, is a sensation of pain. Farther, as all the organs admit into their texture a greater or smaller number of vessels, no wound can occur without an effusion of some portion of the circulating fluid. And, lastly, the greater part of the tissues of the body being endowed with some share of contractility, whether animal or organic, another general result of a wound is a separation of its sides, to an extent proportioned to the magnitude of the injury, and to the degree of contractile force possessed by the part which has suffered lesion.

Nature establishes the cure of wounded parts in two ways. The one process is that of immediate adhesion, which is accomplished in a few days, when the wound is technically said to have been united by the first intention. The other is by the slower means of suppuration and granulation, through which the wound is gradually filled up, and a cicatrix ultimately formed; the process being then entitled the cure by the second intention. It will be necessary to give some account of the nature of these processes before proceeding to enter more fully into the consideration of the different descriptions of wounds, with their appropriate methods of cure.

The conditions which are favorable to the healing of a wound by the first intention are, rest, approximation of the divided surfaces, cessation of hemorrhage, and seclusion from the contact of the air. These conditions being obtained, there follows, for a few hours after the accident, a discharge from the wounded vessels of a serous or watery looking fluid, which then changes into an effusion of what is termed coagulable lymph. This substance displays a strong tendency to organization, and being gradually thickened by the absorption of its thinner parts, it serves as a glue, to bind together the cut surfaces, which is generally accomplished at the end of two or three days, though the union be not as yet firm and perfect. Through this lymph the blood vessels prolong themselves, and the organization of the new matter being at length fully established, the cure may be said to be completed, the whole process usually occupying less than a week. For the success of this process, a degree of increased action in the parts, denoted by slight heat and redness, is required; but this increased action ought not to amount to inflammation, or, at least, the inflammation must be to a very trifling extent, otherwise the cure will be greatly retarded, and must be finally completed by the second intention. If, on the other hand, there be a deficiency of action, the healing process ceases to go on, and the wound assumes the appearance of a callous fissure, giving origin to a thin watery discharge. The cure by the first intention is that which ought to be attempted on every occasion where there is the slightest prospect of its success, as it may be effected with great expedition, and presents a small scar, the part remaining clothed with original skin, a covering much better than any substitute which can be formed to supply its place.

But if it should prove impossible to attain the conditions necessary for completing the union by the first intention, we must look for the appearance of a different series of phenomena. The pain arising from the injury continues and increases in severity, and towards the beginning of the second day after the accident, other symptoms of inflammation show themselves, such as increased heat and redness, with swelling of the parts closely adjoining. The discharge is at first thin, and nearly colorless, though sometimes tinged with blood, and afterwards the surface becomes covered with an effusion of lymph. About the third day there begin to display themselves a number of minute red-colored cones, soft, and bleeding on the slightest contact, which denote the commencement of the process of organization in the effused lymph, and are known by the name of granulations. These, on being subjected to maceration, appear to be composed merely of cellular tissue, and do not present any analogy, in point of structure, with the particular organ from which they proceed, or of which they are henceforward destined to form a part. In the mean time, the discharge becomes opaque, and of a yellowish white color, possessing the other properties of what has been termed purulent matter, and becoming thicker, more viscid, and of a purer white, as the cure advances. The process of granulation now proceeds, until the whole cavity of the wound be filled with the newly generated substance. A thin blue pellicle is then observed at the edge, which increases in breadth, and proceeding from the circumference to the centre, gradually completes the covering of the wound. During this period, the sensibility of the wounded part decreases, and the heat and painful distention disappear as the inflammation subsides. The newly formed cellular tissue acquires a contractile power, by which the wound is curtailed in its dimensions, and the divided surfaces are brought closer together, the bond of union putting on finally a fibrous appearance and consistency. Lastly, the new-formed skin, from being of a blue color, delicate in its texture, and highly vascular, becomes changed into a dense, firm, and almost insensible substance, contracting, at the same time, its dimensions still farther. With this concludes the healthy and natural process of cure by the second intention, which, it may be observed, admits of division into three stages,—those, viz., of inflammation, usually in large wounds accompanied by general sympathetic fever, and lasting from three to six days; suppuration, the duration of which is irregular; and cicatrization, by which the healing of the wound is at length fully accomplished.

A mild degree of inflammation necessarily, as we have seen, accompanies the process of granulation and suppuration; but should this inflammatory action run to excess, or become deficient, the cure is alike impeded. Hence we have wounds which are prevented from healing by excess of action, and wounds whose cure is impeded by defect of action; or, as every wound secreting matter may be considered as an ulcer, we have what are termed *irritable* and *indolent* ulcers. The *irritable* ulcer is attended with acute pain. Its surface is sometimes whitish or ash-colored, but oftener of a brownish red. There are no distinct granulations; the margin is abrupt and irregular, and the discharge is thin and serous, often tinged with blood, and frequently so acrid as to excoriate the neighboring parts. Irritable ulcers occur in subjects whose powers of life have been too highly fostered, and in animals of a delicate and susceptible habit of body. They are also frequently

the effect of improper treatment, such as the application of substances too strongly stimulant, the use of undue pressure of straps or bandages, or want of cleanliness. The *indolent* ulcer, more rare in animals than the former, is distinguished by its thick, smooth, and callous edges, which cause the sore to wear an appearance of great depth. Its surface is smooth, glistening, and destitute of distinct granulations, varying in color, but generally dark grey, or brownish. The discharge is viscid, and usually adheres tenaciously to the surface of the sore. It is often accompanied by a considerable degree of swelling. Neither of these ulcers show any tendency to cicatrize, until the nature of their action undergoes the necessary change into what constitutes the condition of the simple healthy ulcer, such as has already been described while detailing the process of cure by the second intention. Ulcers of long standing are apt to assume the indolent form, and in this state are found to be of very tedious and difficult cure. We should also notice, that certain disordered conditions of the system tend to delay the healing of wounds. These will, of course, require to be watched for, and obviated where possible. The state of the digestive organs, in particular, will often demand a careful attention.

Such are the details which it has been considered necessary to give with reference to the natural process of healing wounds, and to the conditions opposed to its success. It will be requisite that they should be kept in view during the perusal of the succeeding pages; because upon them, as affording the only proper guides to a rational and scientific practice, the principles of treating the various kinds of wounds now to be described will be found to be wholly grounded. Nature has already been too frequently outraged by the ill-judged interference of the groom and the farrier, who should be contented to walk more humbly in her train, striving to distinguish her methods, and rendering their plans of treatment subservient to her aims.

Wounds receive their most common and appropriate classification from the different manners in which they have been produced. We have thus (I.) *Incised* wounds, or such as have been caused by instruments having a sharp edge or point; (II.) *Contused* wounds, or such as owe their origin to contact with bodies which act only by their mass, or by the swiftness of their motion—or, if at rest, by the resistance which they offer to the motions of the animal; and (III.) *Lacerated* wounds, where the tissues of the body are subjected to too high a degree of tension, to which they yield, and are forcibly torn asunder.

I. INCISED WOUNDS.—An incised wound is one of the most common accidents to which the lower animals are exposed, and presents itself in a considerable variety of forms. These will admit of being reduced to three principal divisions, viz.: 1, The *simple incised* wound, which is susceptible of cure by the first intention; 2, The *suppurative* wound, which can only be healed by the process of granulation and cicatrization; and, 3, The *punctured* wound, which differs from the others by its breadth being small in proportion to its depth, and which admits of cure sometimes by the first and sometimes by the second intention.

1. *Simple Incised Wounds.*—The great object, in all cases of simple incised wounds, ought to be to attain an union by adhesion. Some veterinary surgeons tell us, that, in the lower animals, and especially in the horse, it is impossible to achieve a cure by the first intention. They would have spoken more correctly had they contented themselves with maintaining that such a cure was often a matter of difficulty. Daily experience shows instances of the wound attending blood-letting being united without the formation of matter; and Blaine, with every other veterinary of eminence, admits the possibility of thus healing far more extensive injuries. The experiments of Duhamel and Hunter show even that portions may be entirely removed from one part of the animal system to another, and yet perfect adhesion be obtained. Yet it must be allowed, that a considerable obstacle to the success of this process of cure is found in the strong tendency to inflammatory action which seems to characterize the horse; and a still greater obstacle in the restlessness of the animal, and the difficulty of subjecting him to due control. But the proportion of successful cases has been too great, where the immediate union has been judiciously aimed at, for the practice to be allowed to fall into disuse; and the attempt may always be attended with this satisfactory assurance, that even in cases of failure, matters are placed in no worse condition than before, as the cure by the second intention still remains open to us, and what would otherwise have been our first resource may be accomplished still with the same ease as formerly, while the chance of doing better has not been neglected.

As a curious instance of the successful termination of a severe wound occurring to one of the lower animals, which we believe, taking all its circumstances into consideration, has no parallel in the annals of human medicine, the following is quoted on the authority of M. Fromage de Feugre. A dog was thrown from a window in the second story of a building, into the street. The animal seemed to have much pain in the right fore leg, but no fracture could be detected. For a long time he remained unable to use the limb, and at length, its recovery being despaired of, recourse was had to amputation. This was effected by what is termed the flap operation at the shoulder joint. Two arteries were tied, the whole operation having lasted several minutes. M. Fromage then placed the dog standing on the ground, in order that he might wash the wound, and apply the necessary dressings; but as soon as the animal felt himself at liberty, he ran off, and moved with such agility, that for upwards of three weeks no one was able to lay hold of him. Being then caught, it was found that the cicatrix was perfect, and so uniform, that (says our author) it might have been believed that the animal had been born with only three legs; although, of course, the wound had never been subjected to any treatment, but had been left, and that under circumstances highly disadvantageous, solely to the resources of nature.

No wounds can be said to be capable of union by the first intention, excepting such as are recent, and whose margin can be brought into close approximation. The first care, in dressing a wound of this description, ought to be directed towards ascertaining its extent and depth, and the precise nature of the parts involved, by gently separating its sides, washing away the blood by which it is covered, and removing all foreign substances, such as sand, &c., should any be present. The use of the probe may sometimes be necessary, but should be always sparingly applied. The two sides of the division must then be brought into contact, and so carefully retained. For this purpose, in very slight cases, where the injury extends only to the skin, or to the tissues immediately subjacent, the use of adhesive plasters, either alone or aided by the uniting bandage, may be sufficient; and in such cases, they ought to be preferred; but it will be generally requisite, in considerable wounds, that one or more sutures or stitches should be employed. What is termed the interrupted suture is that usually resorted to, and is performed by means of curved needles, armed with silk, common thread, or fine tape. The needle should be passed from without inwards, at some distance from the margin, and down to near the bottom of the wound, and the one lip being thus penetrated, it must be carried through from within outwards. The sides of the wound must then be brought together, when the ligature may be tied, and its ends cut away. If the wound be extensive, more than one stitch will be required, but they should seldom be nearer each other than an inch. The suture generally ulcerates out about the third or fourth day. Sutures ought not to be applied where the wound is of great depth, or where they would be required to traverse the substance of a muscle, as, in such cases, they cannot be fixed with sufficient firmness, and would besides be a source of great and constant irritation to the contractile fibre. Where the suture has been applied, the use of strips of adhesive plaster, made of diachylon, and spread upon leather or strong cloth, will be advantageous in affording support to the stitches, while they remain attached, and in supplying their place should they have ulcerated out, or been removed on account of their exciting too high a degree of action, to which they sometimes give rise. In order to fix the plasters, the sides of the wound should be shaved or closely shorn, and the strips applied of sufficient length to pass beyond the reach of the exuding moisture, a small space being left between each, corresponding to the place occupied by the ligatures, by which means a free egress will be allowed to whatever matter may proceed from the wound,—a point which ought always to be attended to, whether the strips be used along with the suture or alone. The whole should be covered by a proper light bandage, so as to exclude completely the contact of the air.

The application of bandages is a subject well worthy the attention of the veterinary student, as much may be accomplished by their aid in the cure of wounds. Indeed, in favorable situations, they prove often sufficient of themselves to maintain the divided facts in due approximation, so as to set aside the necessity of having recourse to either stitches or plasters, with which, especially the former, it should always be the object of the dresser to dispense, where possible; and that more particularly in examples where there is reason to dread an access of high irritative or inflammatory action, which such applications have naturally a tendency to provoke or increase, though not, by any means in an equal degree. Bandages for the purpose of promoting union can be conveniently applied in most wounds of the extremities, and sometimes in those of the head and trunk, while in injuries of the haunches, the buttocks, the shoulders, the breast, the stifle, the flanks, &c., they are of difficult application, and can only be employed as a covering to the part, without at all conducing to the union of the wound by keeping its sides in contact, which must be left to be accomplished by the other means described. The form of the uniting bandage necessarily varies according to the direction of the wound, whether it be longitudinal, transverse, or oblique. When it is desired to draw together the margins of a wound running parallel to the long axis of the limb, the bandage is composed of a single piece of cloth, of a length and breadth proportioned to the extent of surface to be covered. In the middle of this a longitudinal slit of two or three inches in length should be made. The bandage must then be rolled up at both ends, and the slit being applied over the wound, one of the rolled ends should be passed round the limb, and through the slit, when, by pulling the ends, the whole cut surfaces are approximated; and by passing the roller once or twice round the limb, and securing its extremities, the parts are retained and supported in the proper situation. Before applying the bandage, a light soft pledget, thinly smeared with simple ointment, should be laid over the wound, and a compress placed at a little distance on each side. These compresses will receive the principal part of the pressure from the bandage, and will serve to direct it so as to push together the parts at the bottom of the wound. The bandaging of wounds whose direction is transverse or oblique to that of the limb becomes a process of greater difficulty, and we fear that its complicated aspect will be found sufficient to deter many from the trouble of attempting it. But as there may be cases in which the anxious proprietor of a valuable animal may rightly consider, that scarcely any degree of

labor and attention can be ill-bestowed in preserving its soundness and handsome appearance, we subjoin the following directions. For the transverse or oblique wound, two compresses and two rolled bandages are required. One of the compresses should be formed of a piece of cotton or linen cloth, as broad as the wound is long, and folded to a convenient thickness, but having one of its extremities left free, which should be divided into several slips. This should be applied above the superior margin of the wound, in a line parallel to its direction, and fixed there by several turns of the rolled bandages, which should be continued down to the edge of the division. The other compress is to be formed in the same way, with the exception, that instead of the free extremity being divided into slips, it should be perforated by a number of holes corresponding to the strips of the upper one. This compress must be applied below the lower lip of the wound, and secured there by several turns of the second roller. A soft pledget, thinly covered with some simple ointment, such as the common or Turner's cerate, is then to be laid over the wound, and the strips of the upper compress being passed through the openings in the lower one, the two ends are to be pulled in opposite directions, by which means the whole divided surfaces will be brought into exact contiguity. The ends of the compress should then be laid flat along the limb, and held by an assistant until they are fixed by continuing the turns of the rollers, between which they should be several times folded for the sake of greater security. Lastly, the ends of the rollers are to be fastened by pins, or by a few stitches at the lower part of that division of the limb which has suffered the injury. The uniting bandage should be applied sufficiently tight to ensure its retaining its situation, but not so as to cause any considerable degree of constriction to the limb.

The precise method, therefore, to be employed in dressing a fresh incised wound, with retracted edges, must be adapted to the particular nature and situation of the injury. If the uniting bandage can be applied so as to keep the edges of the wound in contact, it ought to be preferred as the least irritating dressing. Where its use is not likely to be attended with advantage, the strips of adhesive plaster come next in order as fitted to promote the sanative union, but it is only, as has been previously remarked, in slight cases that their unassisted use is likely to prove efficient. The suture, again, must be had recourse to, only where the other methods are insufficient or inapplicable; but the stitches, in large wounds, should be always assisted by the use of plasters, for reasons already noted. It is scarcely necessary to add, that wherever one kind of dressing can be made to assist another, they ought to be combined as circumstances may admit or require.

The host of stimulating applications, such as the various balsams, acrid saline solutions, woundstones, (usually prepared by fusing together one or more of the caustic metallic salts,) &c., so frequently recommended for their healing virtues, are all of them more or less productive of effects opposed to the success of a cure by the first intention, and should therefore be laid wholly aside in the treatment of the simple incised wound.

The proper method of removing the dressings is a matter scarcely less worthy of attention than their first application. It will seldom be necessary to attempt their removal before the second, or, more frequently, the third day after the injury. Care must now be taken not to expose the animal to unnecessary torment, or the still imperfect cicatrix to risk of damage, by hasty or violent handling. Let the dressing be softened by tepid water where they adhere through the hardening of effused blood or matter; and where plasters have been applied, they should be removed by raising their extremities, and pulling them from each side towards the line of the wound, so as to avoid all danger of re-opening its cavity. Long exposure and much handling of the wound should be avoided, and the probe must be sparingly used, if used at all, which will seldom be necessary. Where stitches have been employed they should be divided and removed, if they have not already ulcerated out; and the precaution of applying fresh strips of plaster before detaching the stitches may often be adopted with propriety, as a means of insuring constant support, where it is feared that the cicatrix is still destitute of sufficient solidity to maintain its union. The injured parts should be lightly washed before the application of fresh dressings, as want of cleanliness will often prove a serious obstacle to the cure. The intervals which ought to elapse between the subsequent dressings must be regulated by circumstances. It is seldom that they can be required oftener than once in the twenty-four hours; and where the process of union has gone on successfully, even this need not be long continued, as the cicatrix will speedily acquire that degree of consistence which renders it independent of extraneous support; at which period the cure of the wound may be considered as complete. The success of the plan which has been detailed is not likely, in moderately favorable instances, to disappoint our wishes, but if, after exposing it to a fair trial, it be found that the wound shows no decided tendency to unite, it will then become necessary to refer our farther treatment to the methods to be described under the next subdivision. The injury must now be healed by the slower process of suppuration and granulation.

2. *Suppurative Wounds.* — Whenever the margins of a wound cannot be brought into close contact, and its surface covered by sound integuments, there can be no hope of a cure excepting through the medium of the suppurative process. A wound may be in this condition either through a loss of substance which may characterize the injury, through neglect in the first treatment, or through such conditions of the general system, or of the parts injured, as are known to be unfavorable to the adhesive union. But we shall, perhaps, best exemplify the method of treatment which seems to recommend itself most to notice as founded on right principles, by following out a case in which it may be supposed that the union by the first intention has been attempted, and has not been attended with success. In this way the general rules of treatment, which are sufficiently simple, will be developed, when their special application to individual cases may be left with safety to the judgment of the student.

Recalling, then, what has been formerly said of the effects of excessive or deficient action, our first object will be to inquire whether the delay in the healing process can be attributed to either of these states. If, as frequently occurs, the union be impeded by an excess of what may be termed simple, healthy, inflammatory action, evinced by considerable swelling of the parts adjoining the wound, and by the prominent, firm, and vividly red appearance of the granulations on its surface, this will ordinarily be best allayed by the use of warm fomentations or poultices; while, in some cases, it may be necessary to have recourse to general or local blood-letting, and a restricted diet; and, on the action being subdued to its proper pitch, dressings with simple ointment, repeated daily, will serve to complete the cure, or, where the margins admit of being approximated to a certain extent, though not wholly, the adhesive plasters may be used. It is impossible to reprobate too strongly the shameful abuse of caustic and irritating applications to wounds in this condition, and indeed to all wounds, which constitutes the ordinary practice of the many uninstructed persons who have been so long permitted to maim and torture the best friend and servant which man has been enabled to select from among the lower animals. There is now lying before me a volume, widely circulated in this district, which recommends the liberal use of such substances as blue vitriol, nitric acid, and oil of vitriol, in recent wounds, and which advises the injection of the same acids, mixed in high proportions with spirit of wine, into penetrating wounds of the joints! In other cases of recent injury, verdigris, mixed with melted resinous ointment, is poured warm into the bottom of the wound, which is actually directed to be stitched over this vile composition; and should any inflammatory action follow, as follow it must, similar applications are advised to be employed with redoubled assiduity! That these and similar counsels are in no want of agents to put them in force, I have had many opportunities of observing. It is to be hoped, however, that the time is not far distant when such disgraceful mal-practices shall be wholly unknown in our stables.

But if the excessive action be of that kind which leads to the constituting of what we have described as the *irritable ulcer*, the ordinary causes of which have already been narrated, a more serious obstacle will have been placed in our way, demanding a more patient perseverance in the treatment. Our object must of course be to reduce the morbid state of excitement in the parts to the just standard, and to effect this, sometimes cold and sometimes warm applications have been recommended. The warm applications are likely to suit the greater number of cases; and they may consist of fomentations with decoctions of chamomile flowers or poppy heads, and emollient poultices. The fomentations should be repeated at least twice daily, morning and evening, for half an hour at a time, and the sore should be covered during the intervals with warm poultices, frequently renewed, composed of sifted oatmeal, turnips boiled and bruised, or linseed meal, with the addition of a little lard or oil. When the irritability lessens, and healthy granulations begin to cover the sore, a piece of soft dry lint may be placed between it and the poultice, and as soon as the ulcer wears that appearance which has been described as marking the progress of healthy granulation and cicatrization, the poultices should be discontinued altogether, as the action of the part must now be considered as proceeding within due bounds, and the farther use of emollients would be apt to induce the opposite condition of deficiency of excitement. The farther treatment will consist of the simple dressings formerly recommended; and the aimless use of acrid stimulants is to be deprecated here as formerly. Let it never be forgotten, that every wound wearing the aspect of healthy suppuration tends to cicatrization of its own accord; and that it becomes our duty, therefore, merely to watch nature, with the view of ascertaining that no obstacles are placed in the way of her operations.

Should the action, on the other hand, be deficient, we shall have presented to us those appearances of the injured part which has been described as constituting the *indolent ulcer*; or, should the action have suffered diminution in a small degree only, we shall find the sore presenting pale and flabby granulations, endowed with little heat and sensibility, and having little tendency to cicatrize. To remedy either of these conditions, we must now have recourse to stimulating applications, such as the common resinous ointment, &c., or lotions composed of camphorated spirits, or of some of the warm tinctures. The repeated moderate application of lunar caustic will often be found highly useful in this kind of sore, and washes composed of white or blue vitriol in solution may sometimes advantageously supply the place of the spirituous lotions. But never, even in this condition of the wounded part, should the sore be crammed with powdered blue vitriol, verdigris, or similar substances, as we find sometimes recommended. Ever studious to avoid extremes, the stimulus should be applied so that its effects can be wisely regulated, and stopped as soon as the appearance of the sur-

face indicates that we have attained that due medium of action which shows that the wound is of itself tending to a cure, when we must again have recourse to simple dressings. As the indolent condition of wounds is one which is not commonly observed in the sound horse, but seems rather to be the attendant on injuries occurring to such animals as are of a sickly habit, as are tainted by glanders, or whose constitution has been enfeebled by improper food, or by any considerable evacuation, regard must be had to the state of the general health of every individual under treatment, and such remedies applied as each particular case may demand or admit. In all conditions of wounds, we repeat, the use of bandages, modified as may be necessary, is advantageous, either with the view of serving as active agents in promoting the cure, or merely as coverings, excluding the contact of the air, which is always observed to cause a state of irritation and dryness in sores exposed to its effects, such as is extremely unfavorable to the establishment of a healthy suppuraton. The proper application of bandages in wounds where there is a prospect of cure by the first intention, has been already minutely detailed. In suppurating wounds, with excessive action, they should be applied loosely, as the parts would then suffer by constriction. In such as show deficient action, a moderate degree of tightness is advisable, and often of great service. In the healthy suppurating wound, the bandages should not exercise greater pressure than is sufficient to maintain them in their place.

3. *Punctured Wounds* are generally produced by the animal coming into contact with the prong of the common stable fork, a nail, or a sharpened stake; but of course they may be the effect of a thrust with any pointed weapon. A simple punctured wound, which has not injured any important internal organ, or penetrated any of the cavities of the body, is usually of ease cure. Much, however, depends upon the nature of the instrument by which the lesion has been effected. If it have been caused by a narrow weapon, having a very sharp point and polished sides, we may look with some confidence towards obtaining a speedy union by the first intention; but should it have been the consequence of a weapon, whose obtuse point and ragged edges do not permit it to penetrate without the exercise of considerable violence, the cure will be likely to be more tedious and more difficult, and will usually be concluded only through the medium of the suppurative process. One of the first points which ought to be ascertained, before proceeding to dress a punctured wound, is the precise direction of the injury; and whether or not its orifice be at its lower or most depending part. It should also be our endeavor to discover whether any of the membraneous fasciæ, or sheaths by which the muscles are surrounded, have been penetrated, as such a lesion often gives rise to high inflammatory symptoms, requiring special interference in the after treatment. But, whatever be its precise nature, we believe it will always be prudent to attempt, in the first place, a cure by the adhesive union. Some veterinary surgeons, of deserved eminence, recommend that, in every case of this description, especially where the injury is of considerable depth, the external opening should be enlarged, so as to give the wound a conical or funnel shape, thus affording free issue to any discharge of blood and serum, and preventing constriction of the parts on the occurrence of the usual inflammatory swelling; the wound being encouraged to go on to suppuration. This, however, is a measure which it would perhaps be wiser to delay, until it may be called for by the actual approach of the circumstances which it is intended to obviate, but which may chance never to occur. It will be better, therefore, to commence our treatment by the application of adhesive plaster, if there be any retraction of the edges of the orifice; or, where the wound is close, a piece of soft lint should be secured over it, by a soft compress and bandage. If the wound be severe, the animal may be bled, and a laxative dose administered, as precautionary measures. About the third day, or sooner, if the horse appear feverish and restless, the injury should be examined. If every thing have proceeded favorably, the wound will be found to have adhered, and a little further time and ordinary care will be all that is necessary to establish the cure. But, if the parts inflame, and the animal winces much under pressure, showing the presence of severe pain, it will be proper to have recourse to warm emollient poultices, repeated every three or four hours, and to fomentations with warm water, or with a hot solution of sugar of lead, which should be employed each time the poultice is renewed. Should the wound go on to suppuration, it is to be expected, in cases where the injury has not been inflicted in a direction from below upwards, or where the orifice does not form the most depending part, that we shall have collections of matter, which in such cases cannot attain free egress, and which may extend under the membraneous sheaths before alluded to, giving rise to the formation of troublesome sinuses. To prevent this, as soon as the actual presence of matter is detected, it should be evacuated by a free incision. The poultices are then to be continued till the action appears to confine itself steadily to the healthy standard, when the cure may generally be completed with the aid of simple dressings.

II. CONTUSED WOUNDS.—Wounds of this description are produced by violent blows with a blunt instrument; or, more frequently, by the horse, while, in swift motion, being brought into contact with an obtuse object. The contused wound is generally of an irregular form, its margins appearing unequal and ragged, and not unfrequently presenting flaps partially torn away from the neighboring parts by a degree of force which leaves them bruised and feelingless, and sets aside all hope of a cure by adhesion. This kind of wound usually leads to the developement of high inflammatory action, during the suppuration, consequent upon which such portions of the bruised parts as have been too much injured to retain their vitality are thrown off, leaving a vacuity which is to be covered by the formation of granulations and a cicatrix. In slight cases, however, it is possible that the lesion may not have gone to so great an extent, and that there may still be some prospect of a complete, or at least a partial union by the first intention. In any case, it will be proper to bring the divided surfaces into as close contact as possible, placing over them the usual simple dressings, lint, compress, and bandage. It will rarely be advisable to have recourse to the suture, as it would be apt to provoke that intense degree of inflammation which, in such wounds, we have especially to fear, but strips of adhesive plaster may often be advantageously applied. Acting thus, even if we do not succeed in obtaining immediate union, we are at least likely to render more moderate the after effects, and to hasten a cure. As soon as any active inflammation shows itself, we must at once take off all pressure of plasters, &c., from the wound, and commence the use of poultices; the rest of the treatment being to be conducted on the plan recommended for suppurative wounds. In this class of wounds we must be especially prepared to expect the occasional appearance of symptomatic fever, which must be met as usual by bloodletting, laxatives, and restricted diet.

The division or abrasion of the skin constituting the "*broken knee*," caused by the falling of a horse, is a frequently occurring example of a contused wound, and may merit especial notice. As the scar left by a wound in this situation is always held to be a great blemish, and usually diminishes to a considerable extent the value of a horse, even when the fall which caused it may have been by a mere and solitary accident, the healing of such a wound, however trifling it may appear otherwise, becomes a matter of some importance. The first step to be taken after its occurrence should be to wosh it carefully with tepid water, in order to remove the particles of sand which usually adhere to its surface. This accomplished, the sooner it is protected from the action of the air the better, as there will be less risk of subsequent inflammation. Where the wound is gaping, having retracted edges, the owner of a valuable horse will do well to have the hair removed by a skilful hand, to a considerable distance above and below the injury, so as to admit the application of a long strip of plaster, by means of which the margins may be brought together, and retained in contact. Over this, dry lint, a soft compress, and a bandage, should be applied. It might even be advisable, where the injury is severe, to place a strong splint along each side or at the back of the joint, securing it at some distance above and below with stout straps, by which the animal might be restrained from bending the limb, and so disturbing the wound. If there be no open wound, but merely abrasion, the adhesive plaster may be dispensed with. An attentive watch should be kept for the purpose of detecting the first appearance of the heat, tenderness, and swelling, which denote the presence of inflammation; when the usual counter applications must be employed, as recommended under the previous heads. Should no inflammation occur, the cure may be completed under dressings similar to those first applied. In this kind of wound, as in every other, stimulating applications are to be avoided, unless specially indicated by the presence of deficient action. Where the injury has proceeded to such a depth as to pass beyond the part where the roots of the hair are attached, the scar left will ever afterwards remain naked, whatever means we may adopt to induce a re-appearance of the natural covering. The gunpowder applied by the groom serves no other purpose than to hide the defect by blackening the surface, and even if we were able to have recourse to the ancient remedy of the ashes of a tortoise burnt alive, as recommended by Vegetius, we should find that we should gain little by substituting an animal for a vegetable charcoal. Should the roots of the hairs have escaped injury, the natural covering will be reproduced, when its growth may be assisted by the use of gentle frictions with some warm unctuous substances, such as the camphor ointment.

Gunshot Wounds may with propriety be ranked in the class of contused wounds; but as animals employed in the affairs of peace are rarely subjected to this kind of injury, and as a correct knowledge of the appropriate treatment can only be acquired by those who seek to obtain it through experience in the midst of campaigns, it will be proper to abstain from encroaching here upon what must be held to be the peculiar province of the army veterinary surgeon.

III. LACERATED WOUNDS.—This description of injury may be caused by a nail, or other pointed but blunt-edged substance, penetrating the flesh of an animal while in motion, and tearing itself a passage outwards while the motion continues; or it may be occasioned by the bite of another animal, &c. The edges of a lacerated wound are unequal, and a flap torn and raised from the adjoining parts is a frequent accompaniment. The rules for treating this kind of injury do not differ from those applicable to contused wounds, and need not, therefore, be longer dwelt upon. I may remark, however, that our chance of obtaining an union by the first intention is greater in the lacerated than in the contused wound.

With this may be concluded the consideration of the treatment of simple wounds. I am aware that many readers may look in these remarks for some notice of numerous circumstances, of common occurrence in the management of this class of accidents, which they will find to be wholly omitted. But my aim has been to display only what might be considered as established principles of cure, and to illustrate these by general sketches of the appropriate treatment,—not to show what ought to

be their special application in every possible variety of case. Besides, many of the causes of variation in the nature and treatment of wounds depend upon the existence of circumstances which bring the injuries in question under the head of *complicated wounds*, upon which neither my time nor space now permit me to enter, even had their consideration formed any part of my plan. Thus, I am compelled to omit all details concerning such wounds as may be complicated by profuse effusion of blood; by their having penetrated into some of the cavities of the body, or injured some of the internal organs; by their giving rise to attacks of spasm; or by their being contaminated by the presence of poisonous matters, of mortification, &c.; a highly interesting, yet difficult field of inquiry. Should it have been my fortune to have had any portion of success in the more easy task of noting the principles which regulate the treatment of simple wounds, my object in writing will have been fulfilled; and I should not even have ventured to attempt so much, had I not been stimulated to the effort by having so often witnessed the principles in question violated on all sides, by individuals who practised at random, assuming no better guides than their wilfulness and ignorance.

It is probable that many will find cause of reproach in the preceding remarks on the score of the occasional minuteness of the details, and, more especially, the technical language in which they are invested. The use of technical terms, however, has been avoided throughout, wherever a better or more generally understood term could be found to supply their place; but to expect a dissertation on any branch of science, from which the appropriate language of that science is required to be excluded, were to ask the performance of a task with the resources necessary for its completion needlessly fettered. Let him who thinks otherwise attempt to describe the process of shoeing a horse, or any other of the most ordinary operations of the art, and he will discover that numerous phrases, in themselves strictly technical, are necessary for his purpose; the employment of which has become to him a matter devoid of difficulty, only because he has been enabled to familiarize himself with their just application. Such a familiarity with, at least, the more ordinary terms of the healing art, ought to be acquired, and may easily be acquired, by every one who wishes to attain some degree of knowledge of the nature and treatment of the various accidents incident to those animals, which may either form part of his property or be placed under his charge. Should such a task appear to him beyond his talents or his patience, it will be better for him to desist from all interference in a matter where his ignorance can tend only to evil; for, in the veterinary art, as in all others, an unskilful or negligent application of means is likely to produce no other effect than to increase our difficulties, and remove us farther from our object. "Laboriosior," says Columella, one of the fathers of veterinary science, "est negligentia quam diligentia."

But it is to be regretted, that many of the writers on farriery, whose works are in common circulation, seem to have addressed themselves exclusively to the unthinking and the indolent, to the standard of whose minds they have attempted to reduce that of the science. They would doubtless have acted better for the honor and advancement of their art, if, instead of degrading the science to the level of such minds, they had endeavored rather so to train them as to raise them up to the level of the science; which, as displayed in the writings of a few of the most approved authors in this and other countries, occupies no despicable place in the scale of useful knowledge.*

* Among these it would be improper to omit ranking Mr. Dick, the able Veterinary Professor to the Highland Society, whose conspicuous exertions for the advancement of that science, to which he has devoted himself with so much talent and zeal, cannot fail to be attended by the happiest results.

SOIL AND PRODUCTIONS OF EAST FLORIDA.—The following statement respecting this province are from a letter of Dr. John Durkee, to his brother in Portsmouth, N. H., dated Jacksonville, East Florida, June 18, 1834.

The banks of the St. John river are generally very shoal, except occasionally a steep bluff, which is thickly studded with live oak, the majestic magnolia, sweet, sour, and bitter oranges, and the lemon—all covered with live moss, hanging down in dense and beautiful festoons. Other fruits found here, besides those I have mentioned, are the best of grapes, figs, citrons, peaches, plums, and berries of various and richest kinds.

Vessels and boats almost daily pass up and down the stream. The steamboat arrives once a week from Charleston, via Savannah, Darien, St. Mary's, and Jacksonville, to Palatka, about 75 miles up the river.

The land back from the river is one perfect level. Its wood growth consists chiefly of pine of middling size, but of superior quality. It is a beautiful ride to mount a horse and travel ten or fifteen miles through the "pine barrens," as they are termed—there is no undergrowth to intercept your vision. The bounding deer can be seen at all times in droves of forty or sixty. The huntsman may take as many as he chooses. They are sometimes killed in the night by carrying a lighted torch. They will approach sufficiently near to be shot. The tiger, wolf, wild-cat, bear, and wild boar, are plenty, and are often killed. The deer, it seems, often engage with each other in fatal contest. I send you two pairs of large bucks' horns. They are inseparably interlocked, showing the manner in which the infuriated animals expired on the field of battle. They met, and fought, and died—in union of heads, but twain of heart.

I have not seen a primitive rock or stone since I arrived. I have found a few specimens of pyrites of iron in the bed of the river and in the creeks. I am told that the limestone rock is found at Alochaway, seventy-five miles from Jacksonville. I went a short time since twelve or fifteen miles into the country, where I found a knot of men at work in digging a foundation for a saw and grist mill. They had descended fifteen feet, and fell upon a stratum of oyster shells. They had penetrated about four feet into the shells, but did not find the lower boundary surface. The stratum was quite compact. This was twelve miles from the river and twenty-five from the ocean. The laborers informed me that beds of these shells were found in like position all over the territory—thus demonstrating that the sea once covered this tract. There are several ancient mounds which I shall visit soon. I have seen some bones and utensils that were found in them. They are very interesting specimens, and I intend them for you. Several medicinal springs have been found in the interior; their properties are principally chalybeate, and have attracted considerable attention for their healing efficacy in rheumatic affections. They are frequented by people from Georgia and other States.

As to the fertility of the soil in this country, it cannot be said to be above that of mediocrity in the northern States, although people can obtain a living here with less labor than is required with you. The chief productions here are corn, rice, peas, beans, and cotton, the sugar-cane, and some others already mentioned. The planters traffic more or less in venison and furs; the lumber trade is profitably followed by some, and also the moss.

The planters are accustomed to set fire to the extensive pine barrens once or twice every year. This practice has prevailed for many years, and its effects, I am satisfied, are detrimental to the soil, and of course to the interests of the possessors. The crops of grass are thus diminished from year to year; the original roots are partially destroyed; but the chief injury consists in the destruction of the grass itself, which, if suffered to remain unmolested, would decompose upon the spot, and impart much fertility to the soil. Not a few plantations have been abandoned because they ceased to supply the herds of cattle, &c., with the necessary amount of fodder, which failure is to be attributed to the above named cause. The planters, however, do not appear to understand the reason of the failure they complain of, and will be likely to pursue their accustomed way until it is interdicted by legislative enactments, which ought to be made and enforced without delay—otherwise the farming interests will be subject to still greater injury, and the country at length become depopulated, or at least much retarded in its increase and prosperity.

Most of the planters raise large herds of cattle. The pasture grounds are not enclosed by fences. Their horses and hogs are permitted to roam in the forests without restraint—their owners sometimes not seeing them once in a twelvemonth. The horses are generally very lean, and can perform but little service.

The rattlesnake attains a much greater size here than at the north. It is sometimes as large in circumference as a man's thigh, and seven or eight feet in length. The virus is much more fatal during the month of August than in the early part of the season. Its color is a lively green, and in very hot weather I have seen it trickle down in copious drops, when I have irritated the animal with a stick. There are times when the whole body seems to be surcharged with the virus, and he may be seen for hours together, biting at every object, and enraged at the rsutling of every leaf.

The rattle-snake finds a superior foe in the deer and the black snake. Whenever a buck discovers a rattle-snake in a situation which invites attack, he loses no time in preparing for battle. He makes up to within ten or twelve feet of the snake, then leaps forward and aims to sever the body of the snake with his sharp bifurcated hoofs. The first onset is most commonly successful; but if otherwise, the buck repeats the trial until he cuts the snake in twain. The rapidity and fatality of his skilful manœuvre leave but a slight chance for his victim either to escape or to inject its poison into its more alert anagtonist. The black snake also is more than an equal competitor against the rattle-snake. Such is its celerity of motion, not only in running, but in entwining itself round its victims, that the rattle-snake has no way of escaping its embrace. When the black and rattle snakes are about to meet for battle, the former darts forward at the height of his speed, and strikes at the neck of the latter with unerring certainty, leaving a foot or two of the upper part of his own body at liberty. In an instant he encircles him within five or six folds; he then stops and looks the strangled and gasping foe in the face, to ascertain the effect produced upon his corseted body. If he shows signs of life, the coils are multiplied and the screws tightened—the operator all the while narrowly watching the countenance of the helpless victim. Thus the two remain thirty or forty minutes; the executioner then slackens one coil, noticing at the same time whether any signs of life appear; if so, the coil is resumed and retained until the incarcerated wretch is dead completely. The moccasin snake is destroyed in the same way.—[Portsmouth Journal.]

A FABLE—*Translated from the French of M. Perrin.*—In the evening of a summer day, the setting sun saw a vapor dense and unwholesome, which spread itself over the flowers, gardens, and meadows. You have well chosen, said the Sun, the time of my departure to taint the beauties of nature. Enjoy for a time the triumph of thy malignity; I will come back tomorrow morning and put an end to your existence.

Moral—The sun is an emblem of truth, which, soon or late, will put an end to slander.

Q.

September 1, 1834.

On the Comparative Value and Importance of Mathematical Science, and on the Pretensions of its Professors.

[From the London Mechanics' Magazine.]

SIR,—Whilst occupied in writing a reply to Kinclaven, I was led to indulge in some observations on the intellectual grade and practical value which ought to be assigned to mathematical acquirements, and on the overweening pretensions of some of the mathematicians; but these remarks became so much extended under my hand, that I have thought it best to give them to you under another form.

I am sir, yours respectfully,

BENJ. CHEVERTON.

Men's minds appear to be differently constituted in regard to the investigation of things. Whilst the generality take a view of a subject merely as a particular case, and reason upon and examine it only as connected with its more immediate causes and consequences, the profound inquirer analyses it, to discover the law or principle which pervades it in common with many others; to trace and connect it with those of dissimilar aspect; to show that in the abstract they belong to one common truth, though in the concrete, or in their actual existence, produced by the modifying agencies of their peculiar circumstances, they present appearances which apparently have no relation to each other. Such are the minds who have for their high aim the extension of the principles of knowledge; but though peculiarly fitted for discovery, they are not the best qualified to bring science down to practical application, or even to make it literally accord with matter of fact. In disentangling the complications resulting from concomitant agencies, they are so intent on arriving at the most general truths, so systematically disregardful of the separate consideration of those agencies, and so much in the habit of keeping the analysis disencumbered of all ideas not comprised in the upward leading train, that when, by a course of synthetical reasoning, they would turn their discovered principles to account, and build up a system on their foundation, they too much exclude the operation of the subordinate laws which concur in influencing, and more immediately regulate, the ultimate result, and which give to things the form and appearance which they present. Their conclusions, though correctly drawn, are true only in part, and by assumption and limitation, true mentally, but not materially, or as found in actual existence.

But there is another class of minds of nearly the same stamp and mould as the former, who, though not taking the like grand and original views, are yet of a kindred spirit. The former act the part of pioneers, but these take to the circumstantials, and bring into subjection what the others merely pass by. They fill up that outline of a science or system which the former, in the discovery of its most general law, was content merely to trace; they bring the analysis to bear on all the relations implicated; weigh, balance, and proportion the conflicting agencies; and are thus enabled to perfect the subsequent synthesis in all its details, to take a complete view of the subject in all its parts, and a comprehensive one in all its bearings, and to bring forth to view the modified results, the exceptions and the anomalies, as illustrations of, and confirming attestations to, the fraudulent truths which at first sight they may appear to invalidate.

Both these classes of men are philosophers, the distinction between them having reference to a tendency to generalize, rather than to the usefulness of their labors, or the rank in which they ought to stand; but they *may not* be mathematicians, that depending on the circumstance whether the science of quantity is required in their investigations. These last, therefore, form a third class, whose object is less the extension and perfection of science or system, than the cultivation of the means thereof, so far as the relations of quantity are concerned.

The mathematicians—I mean mere mathematicians—are doubtless valuable members of the body scientific, but some among them, (the least generally informed,) are sadly inclined to over-estimate the honor of their station, and the comparative value and importance of their labors. In the great field of science, to say nothing of the greater field of knowledge, they occupy merely one of its sections, they facilitate and abridge the work of some, and co-operate in the work of others; but they are neither the pioneers nor the finishers of the operations going on around. Subsidiary and assistant to original investigation, the *science of quantity* is of important service, but if put forward and esteemed as the *science of things*, it is worse than useless, and many who might have made good philosophers, have been spoiled by the false glare reflected from their own doings being taken for the true light thrown on Nature's works. The lines and characters with which mathematical operations are conducted, and whose results, though only abstractions, are too often confounded and identified with realities, are not only the mere symbols of things, but the symbols merely of one or two qualities in things; and therefore, though the conclusions are true, rigorously true, as to the signs, they are false as to the things themselves, when regarded in their ultimate modified results, from the influence of those qualities or accidents which the mathematician does not or cannot symbolise—which he does not, because the complication arising from their reciprocal actions exceeds and defies his means—which he cannot, because in regard to some of them there is not sufficient analogy in the types to warrant the deductions they afford being transferred to the archetypes. Even as to those said qualities (extension and individuality) which form the subject matter of mathematics, the investigation is often limited, and therefore imperfect, from the impossibility of extending the analysis to all the ramifications which branch forth from it. The mathematician arrives at the truth, and nothing but the truth, but not at the whole truth—not even at the whole of the only kind of truth which symbols give. When, however, the case is so simple that the investigation comprehends all the possible relations belonging to those qualities, and the only result sought for in things is a knowledge of those relations, then it may be said, and only then, that the conclusions of the science are not only indubitable, but identical with realities—but what does not this limitation exclude?

The mathematician has a little, a very little, world of his own, in which every thing is in the utmost order, subject to known laws, involving definite and foreseen action, liable to no interference not calculated on and provided for, and the whole capable of coming within his own powers to regulate and govern according to assigned rules; for things which cannot be made amenable to his jurisdiction are ejected from his dominion. He therefore admits nothing of unknown power, or which may exert an influence which he cannot see, and introduce uncertainty and casualty within his precincts. Hence, also, many agencies, though well understood, are rejected by him, lest they should prove too numerous for his perfect cognisance, and lest more subordinate laws should obtain than he can see and understand their bearings; or else he accepts only the first modifications which they may produce, and then casts them out altogether, whereby he avoids the many puzzling anomalies and exceptions which would proceed from their mutual actions. Hence, also, he ejects, as they arise, whatever among the collateral effects may complicate and embarrass the more direct train of results. Thus he sees and comprehends every thing, the whole is within his grasp, demonstration attends him at every step, aberrations are impossible, contingencies are out of the question, all results are naked to his sight, and his prescience embraces all, because his knowledge is certain and perfect, and extends to all. But, on the other hand, this is a world of curtailment and exclusion, in which nature is deprived of her just proportions, and of many of her endowments—it is a world of meagre forms and distorted shapes; and thus feeble man, failing to stretch his powers to a comprehension of the full length and breadth and depth of things, makes the things themselves conform to the extent of his own puny faculties, and then, in all the self-sufficiency of pride, exclaims—behold! this is nature!*

When the mathematician comes forth from this tiny world of his into the world of realities, he is bewildered with the multiplicity of its objects, he is confounded with the immensity of their relations and mutual aspects. He looks for certainty, and can scarcely find probability. Accustomed to demonstrate, he is unqualified to estimate; and in the habit of concentrating his attention to a single, unbroken, unerring, and necessary chain of inferences, and having the power permanently to record its every link, and fix the otherwise fleeting convictions of certainty, he is unfitted to retain a steady and expansive view of several collateral lines of action, to balance conflicting influences, to adjust their proportions, and from the whole to educe the nearest to the true conclusion which only actual results can make to appear. Emerging from his world of abstract ideas, if indeed it be so much as this, he finds the real world, and the things thereof, to be a perfect enigma. He can follow, it may be, in the track of those who have unravelled it a little; but he has no powers of himself to unravel it further. Desirous, however, of doing something, though it may be only after his own method, suiting, therefore, the subject to his means and habits, he seizes a few of the most manageable facts; and if they are not to him already isolated, by his ignorance of the ties by which

* The arrogance of some of the naturalists is astonishing. They sit in judgment on nature, criticise her works, and talk of the attempts in which she has failed to perfect her plan. After all that has been said of the inductive philosophy, and of our being the humble disciples of nature, the race of the king of Castile is not yet extinct.

they with all things are bound together, he takes care to sever their connection with disturbing causes, and to rid himself of all embarrassing extraneous influences. If his facts are not sufficiently fruitful of principles, he can eke out his case with a few postulates; and if they are untractable, he can frame an hypothesis which shall present as nearly as possible the same appearances. He then proceeds in the most lucid and masterly manner, to build his system scientifically. All its parts are in harmony, all its conclusions are demonstrable. His penchant for clearness, order, and certainty, is gratified, and he fondly flatters himself that the results which he brings forth are conformable to nature. He does not consider that the harmony and clearness which he so much admires, gives every reason to suspect that he is entirely wrong; for the one may arise from every element of discord being rejected, and the other from those narrow and contracted views, which, by reason of our limited faculties, we are only able to take when absolute certainty is to be the result. Professor Sedgwick, whose scientific pursuits tend to enlarge and expand the mind, has a just observation in a recent publication of his, which, though having an immediate application to one particular subject, is by no means foreign to the tenor of the present remarks: "To suppose that we can reason up to a First Cause in moral questions—that we can reach some simple principle, whence we can descend with logical precision to all the complicated duties of a social being, is to misapprehend the nature of our faculties, and utterly mistake the relation we bear both to God and man. Such a system may delight by its clearness, and flatter our pride, because it appears to bring all our duties within our narrow grasp; *but it is clear only because it is shallow, while a better system may seem darker only because it is more profound.*" Thus, the mere mathematician is disqualified by his prejudices, his habits, and the tutored bias of his mind, to look at the world of nature as it is. For, however paradoxical it may appear, views may be taken of it, which, though less exact than his, may be more complete, and though less certain, may be more probable. He is really better qualified to comprehend an entire system of worlds, so far as it may be explored by others possessed of a superior order of intellectual gifts—for the only point of view in which he can regard them, is merely as individual entities, whose dependence on each other is governed by one universal law of influence, and whose aberrations and disturbances, therefore, are not in the main beyond his scope. But in respect to mundane affairs, he has not the *coup d'œil*, the tact, or the *intuitive* perception, as it appears to be—though it is not that, nor is it innate, except so far as natural aptitude is concerned; but it is a deliberate process, and an acquirement derived from long habituated reaches of comprehensive thought, and faculties well disciplined by suitable practice—he has not, I say, that fine *eventual* perception, as it may with more propriety be called, which includes the whole implication of things, their mutual actions, and their final issue, whereby others are enabled to combine vastly, if not minutely, to establish something like order and gradation in the gross, if not in the detail; to foresee with a degree of certainty, though it may be with some obscurity; and to catch the shadows, if not the lineaments, of unknown forms. Such powers in any perfection are not often combined with high mathematical attributes, for they are of diverse tendency; but when they are united and directed with a combined effort to connect systematically the wide survey with first principles, they mark not only the true but the pre-eminent philosopher. Such was Newton. In his profound inquiries into the phenomena of nature, requiring new methods of mathematical investigation, his merits in that respect are, no doubt, eminently conspicuous; but yet, as the founder of a system, it is not so much the mathematician as the philosopher which shines forth in him. What a contrast there is between him and Descartes. With what sagacity he brought to light slight and hidden analogies, and what wisdom is displayed even in his scholia and his queries. His very conjectures partake of the nature of science. How extraordinary was that concerning the diamond; and who can say that his idea concerning the cause of gravitation may not yet be verified, or at least rendered highly probable?

The tendency of mathematical studies to unfit the mathematician for the general study of nature, and for investigation into the complex structure of human affairs, has now been stated—in very general terms confessedly, but that of course was unavoidable, unless there was an intention to write a complete dissertation on the subject. There is, however, another cause which lies at the root of that unfitness, peculiar to the mere mathematician. It consists in the very structure of the mind, that is, in the inequality of his faculties. "In almost all the instances of mental superiority," says Dr. Chalmers, "it will be found that it is a superiority above the average level of the species in but one thing—or that arises from the predominance of one faculty over all the rest." We may extend this remark, and say that nature is seldom perfect in opposite directions in the same individual, and that if her bounty flows strongly in any particular channel, it is generally at the *expense* of the diverging streams. This is so remarkably the case in regard to the mathematician, that deficiency in judgment is proverbially ascribed to him. Now judgment, in a popular sense, is a collective word for the several faculties which concern not the abstract ideas, but the realities of things in their actual forms. Thus both the congenital deficiency and the predisposition mutually concur with the habit which they produce to make the mere mathematician what he is—utterly unqualified to investigate any thing out of his own province. But properly to establish the point of his *natural* inaptitude would lead me too far into metaphysical, and, as some would think, into phrenological disquisitions.

Nature may, in some instances, bestow her gifts with as balanced as a bounteous hand; but then the study of mathematics, in all its fullness, is so engrossing, demanding so large a portion of time, as to preclude the generality of its students from the acquirement of that extensive knowledge of things and their relations which is necessary to furnish the philosophic mind. "Mathematics," says Duncan in his Logic, "is an engaging study; and men who apply themselves that way so wholly plunge into it, that they are, for the most part, but little acquainted with other branches of knowledge. Even such as are alleged to have excelled in their own profession, and to have discovered themselves perfect masters of the art of reasoning, have not always been happy in treating upon other subjects; but rather fallen short, not only of what might naturally have been expected from them, but of many writers much less exercised in the rules of argumentation. Because, however perfect they may be in the art of reasoning, yet wanting here those intermediate ideas, which are necessary to furnish out a due train of propositions, all their skill and ability fails them, for a bare knowledge of the rules are not sufficient—we must further have materials whereunto to apply them."

Barbeyrac, in the preface to his translation of Grotius, "De Jure Belli et Pacis," informs us, says Kirwan, that a mathematician undertook to refute it; but of this refutation he says, "on n'a jamais rien vu de plus pitoyable, et on seroit surpris qu'un mathematicien put si mal raisonner, si l'on n'avoit d'autres exemples bien plus illustres, qui montrent clairment que l'etude des mathematiques, ne rend pas toujours l'esprit plus juste en matiere des choses qui sont hors de la sphere de ces sciences." And Condillac, according to the same author, says, "nous avons quatre metaphysiciens celebres, Descartes, Malbranche, Leibnitz, et Locke; le dernier et le seul qui ne fut pas geometre, et de combien n'est il pas superieur aux trois autres?"

It cannot, however, be denied that a few mathematicians have been philosophers; or, rather, that some philosophers have also been mathematicians. Men possessed of an equilibrium of the faculties, and endowed with sufficient energy to sustain and invigorate them all—men of panoramic as well as of microscopic vision—men who extend their views beyond the mere rules, the elegant abridgments, and the ingenious artifices of the science, and who, valuing them only as means to a nobler end, merge the powers of the analyst in subservience to the grand objects of philosophy. It is from men like these that the mere mathematician has received a reflected lustre, and a consideration which is not his due. But the far greater number of philosophers, and the most useful ones too, have *not* been mathematicians. To instance only in our own time, and without adverting to living characters—having regard only to one branch of physical science, that which concerns the intimate nature and constitution of bodies, and passing by the various other departments of philosophy, such as morals, economics, physiology, geology, and the like, we may mention the names of Priestley, Franklin, Davy, and Wollaston.* It is probable that most of our eminent philosophers may have had some slight general knowledge of the mathematics, such as even our practical men commonly possess, and such as becomes a liberal education. They may have run through Euclid just as they may have run through Homer; nay, they may have done more than this, without being mathematicians any more than they were Grecians. This, in particular, may be said of the last-mentioned philosopher, though I believe so much even cannot be affirmed of the others. Even among our engineers,

*We have Mr. Babbage's authority in regard to Dr. Wollaston.

whose pursuits would seem to make mathematical acquirements more requisite, the most eminent, such as Smeaton, Watt, Rennie, and Telford, have not been distinguished by any beyond the merest common-place. Many of their compeers have advanced much farther in these routine attainments, and yet wanted that tact, that fine superior sense, which is far more indispensable to the man who has to take and deal with things as they are, enveloped in all their circumstances, and subject to all their qualities and contingencies. Sir John Herschell observes, that "almost all the great combinations of modern mechanism, and many of its refinements, are *creations of pure intellect*, grounding its exertions upon a very *moderate number of elementary propositions* in theoretical mechanics and geometry." In what have the pupils of the *Ecole Polytechnique*, who are all mathematicians, excelled our own engineers? Let the fate of the first suspension-bridge at Paris tell. We have yet to avail ourselves of the eminent services which the high mathematical attainments of the pupils of our own school of naval architecture were to render to the science—if science yet it be. What has been the result? Does even the Surveyor of the Navy put forward any scientific pretensions? Has he not been selected out of another profession? Has the professor of the school himself succeeded better, or so well, as the unpretending shipwright who built the Pearl? Let it not, however, be understood, that the school has not sent forth able and useful men, or that they have received rewards equivalent to their merits. But it is maintained that in this, as in many other cases, the tentative method has been, and perhaps ever will be, of more value than science, and that those qualities of the mind for which I have contended, and which science cannot give, are superior to and more indispensable than mathematical attainments; and this may be said without condemning the application of analysis, as far as may be, to the successful results which experiments on a large scale may have produced. In such analysis, indeed, if sagaciously and not too rigidly and scientifically conducted, those superior qualities will appear, just as they do appear, in the rough empirical sort of analysis which the successful though unpretending shipwright calls to his aid. Those among the students who are in possession of these natural gifts, will break through the prejudices and pedantry which a too engrossing attention to mere science creates, and keeping it in its proper place will make it secondary or subservient to a comprehensive view of their peculiar and very complicated subject, satisfied, if they cannot mark and estimate all the concomitant influences, in a manner so precise and determinate as they could wish, that they at least form their conceptions and draw their conclusions in conformity to the *truth* of things.*

Let us take other views of mathematicians and practical men bending their faculties towards the attainment of the same object. The most valuable method of determining the longitude was at last accomplished through practical means, and by practical men. Euler aimed to produce an achromatic lens as well as Dolland, but it was the latter who succeeded; and their respective modes of proceeding mark both the character and comparative value of their efforts. As to the steam engine, science (other than the most common) cannot lay a particle of claim to it. It is the all-important gift to the world from practical men alone. One was a miner, another was a blacksmith, a third was a glazier, and a fourth a watchmaker. Science has not even now elucidated all its principles,—one important point is as obscure at the present day as ever it was. During the time this mighty engine was maturing, and having for its ultimate effect a political, a moral, and a social revolution throughout the whole earth, the mathematicians of the foreign academies, the Eulers, and the Bernouilles, even when engaged on physico-mathematical subjects, were exciting each other's ingenuity, and eliciting their mutual admiration, by very profound but very sterile inquiries into things selected purposely and merely for the opportunity they afforded for the most abstruse and difficult investigations. Such was that concerning the gyratory motion of a body fastened to an *extensible* thread, first in a horizontal plane, and then, for the sake of the choice piece of complication produced by the introduction of the force of gravity, in a vertical plane, but ending at last with a suspicion that all was wrong. Such was that on the formulæ for determining the motion of a thread perfectly flexible, ending in unmanageable equations. And such was that concerning tractory and compound tractory curves, formed by a weight in one case, and two or more weights in the other, being moved by a thread whose end travels along a line either straight or curved, ending also unsatisfactorily. *Your* Magazine, Mr. Editor, is also the theatre occasionally for the display and sharpening of the wits of certain geometrical correspondents. Such was the tendency of the problem lately proposed and solved—"To inscribe a quadrilateral in a given circle, having given each of the diagonals and area." Why should not these have their puzzles as well as the more profound analysts? They form good school-boy exercises, and school-boys accordingly have sustained a conspicuous part on your stage. Some persons are particularly apt at such questions, and so are others at solving riddles. The different manner in which the proposal for an undulating in lieu of a level railway has been received by the *mere* mathematicians on the one hand, and by the body of civil engineers on the other, is also abundantly significant of the comparative rank and importance which the former hold in the scale of intellect and utility. Your correspondents, Kinclaven, Iver Maciver, and M S., are mathematicians—geometricians, at any rate—and they have sided with Mr. Badnall. Be it so—the impress is of their own stamping, and the currency is their own issue.

The limits to which I am confined will permit me merely to allude, and only, to a few more instances of the unfitness of the mere mathematician for physical inquiries, and of the unsatisfactory applications of their science. At one time the animal economy was mathematically and mechanically explained. The treatises on physiology were filled with problems, long calculations, and algebraic formulæ. Lawrence says, "that one estimated the force of the heart as equal to 180,000 pounds; another reduced it to 8 oz.; and both these conclusions are deduced from reasonings clothed in all the imposing forms of the *exact* sciences."

Even the phenomena of the mind have been forced within the pale of mathematical disquisition. Hartley's elaborate hypothesis of the *vibratory* nature of thought and feeling would afford a choice and subtle theme for analysts of the French school, if only a few facts could be found to give it a coloring of truth, and a plausible pretence for the application of the calculus. We may then hope to find an expression for the velocity of our ideas, with the corrections due to variations in the temperature, moisture, and tension of the medullary fibre!

To come to our own times, there is Sir R. Phillips' theory *of all things*—ingenious enough, but that is all. Then there is Mr. Herepath's mathematico-chemical theory, accompanied with a challenge to the Royal Society, and preposterously backed with an offer to wager £1000 on the issue, in which the molecules of the gases are continually jostling each other and perpetually at loggerheads. The whole scheme is, however, mathematically and demonstrably true, especially if reasoning in a circle be only a circuitous way to truth.* Then there is the more measured movement of the ultimate particles of matter according to the theory of Mr. Emmet, by reason of the altered ratio of the forces which previously held them in equilibrium—the disturbing force being caloric. More recently there is the somewhat similar, but more elaborate and comprehensive, atomic theory of Mr. Exley, a work which I approach with the greatest respect, for the many profound, ingenious, and philosophic views with which it abounds; and for the very numerous explanations of phenomena which he adduces in accordance with his hypothesis, and which give it a much less speculative cast than the theories previously mentioned. The laws, however, which govern the immediate action of the atoms, if such there be, are probably not scrutable to our means or faculties; and it must be doubted whether our knowledge, even of the elements of matter, is sufficiently advanced to admit of such mathematical disquisitions: the attempt at present appears to be premature, though possibly it may be ultimately successful; and, in the mean time, the experimental researches of philosophers, with Mr. Faraday at their head, will be more useful, and teem with results of greater consequence. What an important though simple fact has lately been brought to light by this gentleman, and how much of a practical character there is about it, that the chemical action of platina in certain cases depends on its being perfectly *clean*,—a circumstance which your very profound thinker, with his algebraic formulæ, would run every chance of overlooking, because it is just on the surface of things. The sagacious practitioner

* Let this be exemplified by an able article which appeared within these few months in the "United Service Journal," written, I believe, by a pupil of the school above mentioned.

* This conspicuous herald of his own and Mr. Gurney's fame will surely be satisfied if his theory be as true as his assertion, that Mr. Gurney's steam-drag would transfer the same weight as it does on a common road, "*two hundred and sixty* or *two hundred and eighty* miles per hour on a railway, supposing mechanical laws followed, and that the materials and the resistance of the atmosphere would allow it." A slight mistake this—identical with Kinclaven's, of supposing the expenditure of power not to follow the ratio of the velocity as well as the resistance. This is another instance, by-the-by, on the part of both these persons, (for they are one only in error, I imagine,) of mathematical fitness and sagacity for physical inquiries.

having his attention alive to every incident, attaches no undue importance to what is recondite, or undervalues any thing because it has not the air of being scientific or *recherche*.

I have thus endeavored to mark the peculiar deficiencies for just reasoning and original investigation, to which the mere mathematician is liable from the biassing tendency of his studies, the natural bent of his mind, and the engrossing occupation of his time. I have illustrated this position with as many instances as my limits will allow, and I have incidentally shadowed forth the true and philosophic mode of conducting inquiries into the mixed and complex affairs which surround us on every hand. In pursuing this subject, there are one or two points on which I wish to guard against misapprehension. It is not intended, then, to impugn any of the methods adopted by the mathematicians in their own science, as purely considered, however they may have differed among themselves respecting them. Still less is it intended to impugn the modes of procedure adopted in the mixed mathematics, or to complain of what has been *fitly* done herein; but rather of what has not been so done—of premature applications of the science before the phenomena of nature have been sufficiently investigated to warrant an hypothesis—of inadequate applications, from a too great sacrifice of physical considerations in deference to the exactness of science—of partial applications being assumed to be complete, or, at any rate, to be of greater pretension and value than avowedly irregular but more comprehensive modes of considering the subject,—and of such applications being put forward in lieu of, and in preference to, tentative proceedings, even when the case points to and admits of their being adopted. Neither is it intended that those observations, or mere hints, rather, concerning the true and more ample mode of philosophising, should point to the analytic more than to the synthetic method, for they refer to both; and the reference is also as much to the secret mental process as to the published and formal procedures. The former is a curious subject, of which scarcely any thing can be known, and the little we can conjecture of it must arise from a knowledge of what passes in our own minds. How intensely interesting would it be to have before us the workings of such a mind as Newton's, whilst maturing his immortal system. We have a glimpse of such things in what is told of Kepler—of his shrewd guesses, tentative methods, and ultimate success in discovering by these means the two laws of the planetary motions which bear his name; and also in what is related of the cut and weighed paper proceedings of some of the geometricians. The results, of course, appeared in systematic mood and scientific dress. The works of Newton gave evidence of certain secret and facile means, before the method of fluxions was announced or known. We have also, in the detail of the experiments which led Sir Humphry Davy to the discovery of the miners' safety lamp, an interesting instance of this mental process, at least of the general course of his thoughts. We are not to imagine that the analysis or synthesis, as brought forth to public view, is in its mental elaboration a direct and straightforward affair. Doubtless there are alternated or mingled methods of resolution and composition, of experiment, tentation, and verification, in a round of mixed proceedings; but from this seeming chaos of thought the plastic spirit of true philosophy evolves coherent forms of symmetry, of truth, and beauty. The heart of man is a secret thing; but the mind of man is yet more impenetrable. I would also wish to be understood as not contemning mathematical acquirements in the slightest degree, but as pleading for their use in opposition to their abuse, and as moderating only the overweening pretensions of their value and importance, both in an intellectual and useful point of view, in which the *mere* mathematician is apt to indulge.

It may be expected from me that I should apologise for assuming the censor in such sort. I beg, then, in justification and corroboration of my opinions, to quote the following sentiments, which have come under my notice since the preceding observations were written—in fact, the treatise in which they appear is just published: "In mathematics we go smoothly on, neither turning to the right hand nor to the left; there is, in fact, no alternative presented to the mind—we cannot do otherwise than give our assent to what is before us. There is no weighing, no balancing of collateral evidence, or consideration of circumstances, such as often clog and impede our progress in many of the other branches of knowledge. How often do we hear mathematicians bewail the difficulties they meet with when they wander from their own folds; and how often do we hear them give utterance to the pleasing but forlorn hope of seeing all knowledge reduced to mathematical certainty and precision?"—"If we examine mathematics in an intellectual point of view, there appears to be something of a mechanical turn in the acquisition of its truths; and it is by no means evident, that to excel in mathematical investigation, the more lofty and elevated of our mental powers are required to be brought into exercise. There is a fact, besides, established by the history of philosophy in all ages and countries, which pointedly bears out this opinion, namely, that we have daily instances of persons making themselves proficients in mathematical science at a very early age; but we never find that a person becomes eminent in mental, moral, or political philosophy, till more advanced in life. This is a fact founded upon the natural course of the human mind, and clearly teaches us, that higher qualities of intellect are required to reason upon and comprehend questions on topics relating to human affairs, than are necessary in the solution of problems connected with the pure sciences."—[Blakey's System of Logic. 1834.]

There is another very important topic connected with this subject, which is, the hurtful influence which mathematical studies, or rather, which a taste for the abstract mathematical method, has had on general reasoning, and on the tone and manner in which investigations into things in general have been conducted—a taste, which, taking its origin in the mathematical predilections which succeed the downfall of the old scholastic methods, has, from the ease and convenience which it affords, for taking determinate but narrow and contracted views of things, and the flattering but fallacious assurances it fosters of clearness, decision, and certainty, infected the universal mind, and marred the philosophy of the age. The length of this article, already too extended for a single communication, precludes me from appending my observations on this topic; but they may, probably, form the subject of another letter, if you are of opinion, Mr. Editor, that such matters are not foreign to the scope and objects embraced by your highly useful and valuable miscellany.

I am, sir, yours, &c.

BENJ. CHEVERTON.

MODE OF PURIFYING PALM OIL.—*To purify Palm Oil, and to whiten it comparatively for making soap.* Take two parts of quick lime and three parts of the muriate of ammonia, the lime having been previously slacked with half its weight of water, and allowed to cool and reduced to a fine powder, and the muriate of ammonia having also been reduced to a fine powder, and then intimately blended with the powdered lime. The mixture is to be put into a still, or cast iron pan, having a close cover to it, and a tube leading from the head of the pan, or still, to near the bottom of the soap copper, which should contain equal quantities of water and palm oil. On fire being applied to the still, the ammoniacal gas will pass over into the soap copper; and as the water and oil combine, continue adding boiling water to the extent of treble the weight of palm oil in all. By this process the color of the palm oil will be almost instantaneously changed to a pale yellow. The boiling palm oil and water should, of course, be kept rapidly stirring while the gas is passing through. The ammonia, being an alkali, adds to the strength and detergency of the soap, while the peculiar smell imparted by it is so weak as scarcely to be susceptible after a few days' exposure to the atmosphere. —[London Mech. Mag.]

INFLUENCE OF COLOR ON HEAT, THE DEPOSITION OF DEW, AND OF ODORS.—Dr. Stark, in a paper in Jameson's Journal, vol. xvii., p. 65, has shown, by experiment, that one principle operates in the production of all the above results. A black color, whether in solids or fluids, absorbs heat most rapidly, and parts with it most rapidly; dew is also deposited more rapidly on this color than on any other, and with proportionate rapidity evaporated from it. Odors, whether agreeable, offensive, or of infectious diseases, are, in like manner, absorbed with greater rapidity, and in greater quantity, in a given time, by black colors; and discharged by these colors with proportionate quickness. The other colors are next effective to black in the order of blue, brown, green, red, yellow, and lastly white; which last absorbs and gives out heat, dew, and odor, more slowly than any other color. These facts will afford valuable hints to gardeners for the colors of walls, of walks, of rockwork, of soils, of coverings for protection, and even of their dresses.

A GARDEN SCHOOL, in which boys will be taught gardening, agriculture, and rural economy generally—and girls, sewing, cookery, and domestic economy in all its details—is about to be established at Fordhook, (England,) by Lady Noel Byron. Her Ladyship has engaged, as head master of the establishment, Mr. Craig, who had formerly the care of the agricultural school established by the late Mr. Vandeleur in the south of Ireland, and who is now on his way to Switzerland, to inspect the establishment of M. Fellenberg at Hofwly.—[Loudon's Gardeners' Magazine.]

Practical Remarks on Bones, as a Manure, from the Year 1827 *to* 1832 *inclusive.* [Communicated to W. Drummond and Sons, by James Morrison, Esq., Factor to Sir Evan M. Murray MacGregor, of MacGregor.]

Bones, as a manure, had not been introduced in the Western District of Perthshire until the season of 1827, and being new in the district, were met with the derision consequent upon any innovation on the *good old system*, and their introduction was looked upon as a phantom, and the act of an adventurer; but, upon the crop of 1827 being matured, the candid acknowledged their astonishment, and the result was, that a quantity of 45 tons was ordered for farmers in the neighborhood, and applied in producing the turnip crop of 1828.

The following remarks being confined to the operations on the estate of Sir E. M. MacGregor, of MacGregor, the reporter humbly, but satisfactorily states, that the success resulting from the application has far exceeded his most sanguine expectations.

In the month of February, 1827, a small farm was taken out of the hand of a tenant, and there not being a sufficiency of dung to raise the necessary quantity of green crop, recourse was necessarily had to bones; and in consequence of their virtue not having been proved, a trial upon a small scale was considered advisable, and only about four acres were made trial of, with the quantity of 45 bushels an acre applied, in the raising of turnip. The field consisted of eight acres, whereof four were manured for turnip, at the rate of 21 single horse carts of farm yard dung, of about 16 cwt. each per acre; the land, in both instances, was prepared in the same way, and otherwise under similar circumstances, and upon examination by qualified judges, the crop of turnips, done with the bones, was pronounced to be the best.

In the year 1828, the said field was in barley, and turned out an excellent crop, the precise produce the reporter had not the means of ascertaining, (the crop having been sold by public roup,) but the crop previous to the sale was estimated or appraised at nine bolls an acre, which quantity, it was understood, was exceeded, when the produce was thrashed. A circumstance worthy of remark may here be mentioned. A cottar, as they are called, had about a rood of land in the same field that year, part being under potatoes, the other part was in turnip, and not less than at the rate of forty cart loads of dung an acre applied; the barley, on that portion of the field, was quite inferior to that of the barley after the turnip with bones, although the lands were of equal quality, and otherwise under similar circumstances. The grass, however, in 1829, was superior on that part of the field treated as latterly described; but the grass, where the bones were applied, was nothing inferior to that of the field dunged at the rate of twenty-one cart loads an acre, and the pasture since has by no means fallen off, or become worse. In farther proof of the powerful effects of bones, the reporter begs to state, that the same results were manifest on a field, on the farm of Easter Kames, on the estate that same season, where the land was much exposed, and naturally damp bottomed; and more recently, in favor of their utility to pasture, that in passing along the public road, it is most distinctly observable the difference in favor of bones upon a field on the farm of Upper Lanrick, that was laid down after turnip that had been produced with bones in the year 1828, and has been in pasture since; vegetation on which part is, on this, the 4th February, 1833, a week or ten days more forward than the other part of the field that was dunged at the same time, with at least twenty-five carts of farm-yard dung an acre.

From the favorable results of the application in the year 1827, an extended breadth has been encouraged—so much so, that, in 1831, the reporter had 40 acres of turnip with bone manure, all of which were superior to what could have been expected, considering the small quantity applied, being at the rate of 25 bushels an acre—the results of experiments made in 1829, arising from the application of quantities varying from 20 to 40 bushels.

The turnip crop, with 20 bushels an acre, was quite inferior to that with 25; but with the intermediate quantities betwixt 25 and 40, the difference of crop was quite indiscernible. Hence, so far as the reporter is capable of judging, he is of opinion that a greater quantity being applied than 25 bushels an acre may not be compensated by any extra produce.

The produce of globe turnip, with 25 bushels, was at the rate of 40 tons per acre of bulbs, exclusive of shaws or tops; about which quantity the reporter has always considered a full crop; and the yellow species, under the same treatment, was fully 28 tons, exclusive of shaws, and quite superior to the crop of turnip with 18 cart loads of dung an acre.

The mode of applying the bones, until 1831, was by sowing them out of the hand into drills 27 inches apart, and covered about 3 inches deep, by splitting the drill, as it is called—that is, drilling twice, and immediately depositing the seed by the common seed machine in the usual way, being sure that the seed is put as deep as the bones, as much of the success of a turnip crop depends upon the seed being put pretty deep, and immediately among the fructifying matter, particularly in dry weather.

In the season of 1831, abone-sowing or depositing machine was procured, costing £8, by which, under a diligent application, six acres in the course of a day can be executed, under much more favorable circumstances than by the hand, and without any loss by scattering, which must be the case by the latter mode, and at much less expense, being done at the same rate as putting in the seed, both being performed at once, and with no additional trouble; whereas under the most judicious management it cannot be done by the hand under 10d. an acre; whilst that of laying on dung for turnip cannot be accomplished for less than 6s. an acre.

To those unfavorably situated, and out of the reach of a foreign supply of putrescent manure, the introduction of bones as a manure may be considered the greatest boon the agricultural interest has realised these many years, and more especially to those upon sound dry land, that will admit of eating turnip off with sheep. As upon such soils a crop of turnip can be raised with 25 bushels an acre, and at an expense of 70s., and in pulling one-half of the crop, and consuming the other upon the field with sheep, there is no preparation equal either for laying to permanent pasture, or for an alternate system of cropping. On such soils as above described, previous to the introduction of bones, although by their nature the most manageable, yet from the means of fertilizing them being beyond reach, the occupier could not help himself, and the usual practice of managing such soils was to summer fallow that portion of the farm for which their home supply of dung was inadequate to the raising of green crop, and to lay to pasture for three or four years, (after reaping a miserable white crop,) in poverty, and consequently the soil nothing benefitted by being in pasture, and upon being again lifted, producing nothing equal to maintain a proper, far less an improving fertility; whereas by a judicious application of bones, the fertility of such soils may be so increased in course of a rotation, that afterwards any portion of foreign manure may be unnecessary under ordinary circumstances.

To those who may be less favored, by occupying a turnip soil upon a damp bottom, the advantage may even be considered great; as such lands cannot be kept in a due state of fertility with their own resources, and from the bones being of so portable a nature, the saving of carriage in the one case is equal to the purchase price of the means of raising a crop of turnip with the other. Hence two acres of turnip can be raised at less expense with bones than one acre with a fair and reasonable quantity of dung; and should the crops be equally good, the quantity of manure resulting from an acre of each will be the same, consequently there is the manure produced from one of the acres with bones to return upon the two acres manured with the same; and the manure produced from the other acre with bones to apply in the same way as that which would naturally arise from an acre with dung: so that it must be evident that by adopting such a system, the occupier has it in his power to increase the fertility of the soil greatly beyond what can be accomplished by the foreign dung system, with the same outlay.

The following statement may be submitted with a view to make the above remarks more clear and distinct, viz.:

DUNG SYSTEM.

Purchase price of 16 carts of dung, at 4s. per cart load,	£3	4	0	
Carriage of 16 carts ten miles, at 5s. per cart load, including tolls, &c. &c.,	4	0	0	
Carting, filling, and spreading, in the application on the field, 6s. per acre,	0	6	0	
Expense of an acre with dung,				£7 10 6

BONE SYSTEM.

Purchase price of bones for two acres, say 50 bushels, at 2s. 4d. per bushel,	£6	13	8	
Carriage of 50 bushels ten miles, say	0	6	0	
Application to the land,	0	1	8	
Expense of bones for two acres,				£7 1 0
Balance in favor of two acres of bones,				£0 9 0
Against the above balance of 9s. in favor of bones, there falls to be deducted the expense of laying on the manure, produced from one acre of bones, upon the two acres that were manured with bones, and which, as charged above, is				0 6 0
Still, the result of manuring two acres with bones, in place of one with dung, at a distance of ten miles from the foreign supply, as stated above, is				0 3 0

Besides the value of keep arising from an acre of turnip, which may be computed, at a low estimation, to be worth £6, after defraying the necessary expenses—thus making the difference betwixt the two systems £6 3s. in favor of bones.

The experience of the reporter in the use of bones being confined to the turnip husbandry, he cannot hazard any opinion with regard to their usefulness to strong clay soils and white crops, but of the advantage arising from their application to turnip soils, he is more convinced of from every year's practice.

On Live Moss as a Substitute for Potsherds, Cinders, and similar Matters, as Drainings for Pots. By Mr. THOMAS PARKINS.

In p. 134, are recorded some experiments on draining pots, with coal cinders, accompanied by some pleasing and useful remarks. The most common method of draining pots is, it is well known, by using broken pieces of pot, or potsherds; which practice, there can be no doubt, became general from the circumstance of such materials being always at hand. It is generally difficult to root out long established practices, and substitute new ones. I, however, have been trying if "living matter" would not answer for draining pots; and the success which has attended my experiments enables me to recommend the practice strongly. In the autumn of 1833, I received some carnation layers, which had been taken up the day before, and I potted them in the usual way. About a month after this, I received another set of layers, which had been brought nearly 200 miles across the country, and which, consequently, had been out of the ground some time. The pots in which these last were potted were drained with live moss, (Sphagnum L.) On turning the plants out of the pots into the border, this spring, I found the latter much superior to the former, being more healthy and stronger plants; which I attribute entirely to moss being used as drainage, instead of pieces of broken pots. About the same time I potted some fine suckers, using moss for drainage; and at their removal, in March, I found the pots full of fine fresh roots. These results have induced me to adopt the plan almost universally this spring; and all the plants so pot-

ted present a most healthy and luxuriant appearance. Although moss may be considered powerfully absorbent of moisture, it will nevertheless permit a more easy percolation of fluid than any such compact material as a piece of broken pot. But this is not the only advantage gained by its use. For rapidly and luxuriantly growing plants it is surely of some consequence to be able to transfer them from one pot to another without injuring the roots, as is unavoidably the case when pieces of broken pots are used. Moss, however, not only affords drainage, but, by its slow decomposition, a lasting, and perhaps rich source of food to the plants growing in it; consequently, when the proper time arrives for the plants to be repotted or transplanted to the flower-border, it will be unnecessary to remove the moss, which will not only save time, which is often wasted in picking out the broken pieces of pot, but will prevent any danger of injuring the roots. Cannon Hall, near Barnesley, May 17, 1834.—[Loudon's Mag.]

Efficacy of Oxalic Acid in stimulating dormant Vegetable Life. By WILLIAM HAMILTON, Esq., M. D.

I took, on the 5th of May, four grains Victoria wheat, and put two to soak in 2 oz. of soft water, acidulated with two drops of a saturated solution of oxalic acid; while the other two were put into rain water. At thirty minutes past one in the afternoon of the 6th of May, after having been macerated for twenty-six hours, I took out one grain from each, and, washing that which had been in the acidulated water from any adhering acid, I planted both in separate pots; and, at noon on the following day, after macerating for forty-eight hours and a half, I took the remaining grains, and sowed them, without washing that which had been soaked in the acidulated water. On the 10th of May, the first-sown seed, which had been soaked in the acidulated water, first appeared above ground, at 8 A. M., and at the same hour on the succeeding day had made a growth of four-eighths of an inch; while the grain soaked in rain water, and sown at the same time with it, was still invisible. At length, on the 12th, at 8 A. M., by which time the leaf of the former was fully expanded, and its height was 1⅛ inch, the other appeared above ground, and, almost simultaneously with it, the second seed taken out of the acidulated water, and planted without washing. On the 14th, the plant which first appeared was, at 8 A. M., 2 ⅝ inches, while that sown at the same time with it had its leaf just beginning to expand, and its height was only 1 inch. The fourth seed, (the second of those soaked in rain water,) had not, and has not yet appeared. At this moment, 3 P. M., May 20, the first of those soaked in oxalated water measures 6 inches from the ground to the top of the longest leaf, (two leaves being fully developed;) that soaked in rain water 3⅞ inches; and that which, having been soaked in the oxalated water, was sown without washing, 2 inches, and a little more than six-eighths. What their future progress will be, we have yet to learn. However imperfect and inconclusive these experiments may be, their notice may not be altogether useless, since they may serve to stimulate some better experimenter to take up the subject, and prosecute it more successfully. Plymouth, May 20, 1834.—[Ibid.]

Lady's Botany; or a Familiar Introduction to the Study of the Natural System of Botany. By John Lindley, Ph. D. F. R. S. &c. &c. &c.; Professor of Botany in the University of London. 8vo., 302 pages, 25 plates. London, 1834. 16s. plain, £1 1s. colored.

We look upon this work as one which will do more towards rendering the study of botany popular, than any other which has appeared since botany became a science. Dr. Lindley has here done what, in 1825, we proposed for him to do in the Natural Arrangement Division of our *Encyclopedia of Plants*. It would, however, have occupied too much room in that work.

The difference between this popular introduction to botany and all the other popular introductions which have preceded it, is that Dr. Lindley's object is to make the reader acquainted with the nature of plants, while all the others attempt little more than endeavoring to teach the pupil how to find out their names. "All seem curious," Dr. Lindley observes, "to know something of the natural system, and many, no doubt, take infinite pains to understand it; but it is to be feared that a large portion of those who make the attempt are far from meeting with the success their industry deserves. On all hands they are told of its difficulties; books, instead of removing those difficulties, only perplex the readers by multitudes of unknown words, and by allusions which, however clear they may be to the experienced botanist, are anything rather than illustrative in the eyes of a beginner, who is often fairly lost in a labyrinth of resemblances, differences, and exceptions. The cause of this lies not in the science itself, so much as in the books that are written concerning it. Since the appearance of my *Introduction to the Natural System of Botany*, in 1830, several works of great merit have been published on the same subject both in this country and abroad, so that the student is abundantly supplied with guides; and, if his object be to understand it, as an important branch of natural science, they are sufficiently well adapted to his purpose; but, for those who would become acquainted with botany as an amusement and a relaxation, these works are far too difficult. Treating the subject, as they do, in great detail, and without consideration for the unlearned reader, the language, the arguments, and the illustrations employed in them, must be unintelligible to those who have no previous acquaintance with botany. The characters of the natural groups or orders, into which the vegetable kingdom is divided, are not, as a whole, susceptible of such an analysis as a young student is capable of following; and I can quite understand how the whole system may appear to be an unintelligible mass of confusion. It has therefore occurred to me, that if, without sacrificing science, the subject could be divested of the real, and of the still greater number of imaginary difficulties that frighten students, and if they could be taught to recognise the natural tribes of plants, not by mere technical characters, but by those simple marks of which the practised botanist exclusively makes use, a work in which such objects are attained might be found of some utility." (p. 5.)

The *Ladies' Botany* consists of twenty-five letters, each letter being illustrated by a copperplate engraving of the size of the page. The subject of each letter is one, two, or more of the natural orders. The engravings are all of plants common either in the fields or in the ordinary gardens of Britain; and there is scarcely one of them that may not be easily procured by any person residing in the country.

We consider it quite needless to recommend this work: it must find its way into the library of every lady, and it ought to be in the coat pocket of every young gardener. In its present form, however, it is too expensive for the last class of readers; for whom we would strongly recommend an edition with the engravings done on wood. Such an edition might very well be sold at seven or eight shillings. As the work will soon be translated into French and German, as well as republished in America, casts of the wood engravings might be sold to the publishers in those countries for as much as would return to the London publishers the prime cost; one-third of that cost being, we believe, the usual rate at which such casts are sold. The copperplates might then be reserved for the colored edition, which is quite cheap enough at a guinea, considering the very superior style in which the coloring is done.—[Ibid.]

Hooker's Journal of Botany, &c. Part III. for July, p. 193, to p. 288. Six plates. 7s. 6d.

We have noticed parts i. and ii. of this work in p. 232, and expressed our satisfaction at its appearance. To the scientific botanist it must be highly acceptable; and, as we have already observed, it is not without popular interest. Mr. Hogg's paper on the classical plants of Sicily is concluded. In it we find that celtis australis, the European nettle tree, is considered, by Mr. Hogg, as the true lotus tree of the Lotophagi. The tree is described by Theophrastus as of about the height and figure of a pear tree; with fruit of about the size of a bean, placed like the berries of the myrtle, changing color, and ripening as a bunch of grapes; sweet, pleasant, and wholesome; and the food of the Lotophagi. Wine was made of the berries; and the wood, which was of a dark color, and hard, was used, among other purposes, for making flutes. The wood is still used in Sicily for making flutes and other musical instruments; in France, hayforks are made of the branches: and, in Spain and Greece, the berries are still eaten. The seeds of Pinus pinea are called Pinocchi in Italy and Sicily, and are used in desserts, puddings, and cakes, like almonds. A cone of this pine, fastened on the top of a staff adorned with wreaths or flowers, made the thyrsus of the Bacchanalians; which was a symbol of authority carried by the priest of Bacchus, and is frequently to be seen in ancient sculptures and pictures. Mr. Hogg supposes the stone pine must have originally been introduced from Greece into Italy and Sicily, as he has never observed it in a natural wood, but only about villas and farmhouses. The young heads of Asparagus acutifolius and albus are cut from wild plants, and brought to table, in Sicily; they are thin, bitter, and often stringy, and form a poor substitute for the cultivated asparagus. Muscari comosum is common in the fields. According to Sibthorp, the bulbs of this hyacinth are still eaten in Greece. The berries of Smilax aspera, when ripe, are of a beautiful red color, and are very ornamental: the plant grows as a creeper in the hedges, on trees, &c.; more especially the variety auriculata. The date palm is not uncommon in Sicily; and this tree, with the American aloe and the Indian fig, gives to the Sicilian landscapes a singularly beautiful and almost oriental appearance. The dwarf fan palm, (Chamærops humilis,) covers the wild uncultivated land and hills of Sicily, as the furze does those of England. "A kind of light but strong hat is made by neatly plaiting the leaves together; and the plant is used for brooms, seats for chairs, thatch for cottages, and many other purposes." (p. 214.) The stems of the Arundo Donax, the cultivated or pipe reed, are used for "many domestic purposes in Italy and Sicily; for fences in gardens and vineyards, for props to bind vines to, and for making shepherds' pipes, distaffs, fishing-rods, walking sticks, &c." Wheat, for which Sicily has been celebrated from the very earliest period, is taken to certain places, named *caricatorj*, and warehoused in pits, to be ready for exportation. Oats are preserved in a similar manner in the south of Russia. "The sugar cane, having been introduced from Africa, was some years ago much cultivated in the neighborhood of Syracuse, but of late it has been abandoned, on account of the trade with Brazil." From the Ripidium ravennæ, the ravenna sugar cane, the shepherds' pipes are also sometimes made. The common rice is cultivated extensively near Lentini; and the air there is rendered very unwholesome by the putrefaction of the water and vegetation, occasioned by the intense heat of a burning sun. The Indian corn, or maize, is roasted when half ripe, and eaten by the common people; the flour is the real Italian polenta. The

Papyrus antiquorum has been long naturalised in Sicily. It was considered by Dioscorides as one of the most useful of all plants. "The different purposes to which it was applied by the ancients, in addition to the making of paper, are these: in medicine, for the cure of fistulæ and ulcers; for food to the natives, who chewed it either raw, boiled, or roasted, for the sake of its sweet juice; and for torches and candles; boots, sails, mats, garments, coverlets, and ropes, were formed of it; and the roots were used as fuel, and for making cups and other utensils." (p. 219.) Mr. Hogg has treated on "vessels made of the papyrus," in our Mag. Nat. Hist., in a paper which excited intense interest at the time of its publication: it is beautifully illustrated by engravings. (See Mag. Nat. Hist., vol. ii., p. 324, to p. 332, and figs. 88 to 92.) "The head of the flower-stem of papyrus, resembling a thyrsus of many grassy filaments, was used to crown the statues of the gods, and to adorn the temples in Egypt. The Egyptian priests likewise wore shoes made of it; and the plant is of frequent occurrence in the ancient hieroglyphics. The papyrus has long been naturalised in Sicily; and flourishes in abundance on the banks of the small river which rises in the clear and limpid fountain of Cyane, now called La Pisma, and joins the Anapus a little before it flows into the great port to the southward of Syracuse. To this spot the papyrus, in all probability, was originally introduced, either from Egypt or Carthage. It is not seen growing spontaneously in any other river in Sicily. One of the largest heads, gathered in La Pisma on May 31, 1826, measured 19¼ inches in length; and the number of its umbellulæ was 397. It grows to the height of 22 feet, or 25 feet. Paper is sometimes prepared from it, merely as a curiosity, and sold at Syracuse." (p. 221.) This very interesting paper concludes with an enumeration of the plants found by Mr. Hogg, arranged according to the natural system, and amounting to 160 species.

There are a number of other articles in this part of the Journal of Botany, but they chiefly consist of scientific matter.—[Ibid.]

THE BRIGHTEST FLOWER.

BY J. N. MCJILTON.

There is a flower, a lovely flower,
Of gayer, greener bloom,
Than ever lent an eastern bower
Its hue and rich perfume.
Potosi's gems and glittering ore
Beam not the brightness of this flower.

Not all the sands the Caspian's tide
Rolls to the shell-wreathed coast,
Nor all the gold on earth beside,
Such brilliancy can boast;
No flood of light or starry tower
Can ray the glory of this flower.

The Eden home, when Adam fell,
Was redolent and fair,
No earthly flowers could those excel
That grew and flourished there;
Yet Eden's shade and scented bower
Were gloom, compared to this sweet flower.

Fast by the throne of God it grew,
On Zion's holy towers,
And bloomed in brightness ever new,
Fairest among the flowers;
Nor seraph's strength, nor angel's power,
Could rear this rich, this splendid flower.

A bud from Heaven's eternal tree,
Pluck'd by the hand of God,
Transplanted was on Calvary
And struck its roots in blood;
It grew and flourished spotless, pure,
A green imperishable flower.

Behold the tree whose boughs are spread
O'er all the earth abroad,
A shelter for the weary head,
A bower built by God.
He is the root, firm and secure,
That warms with life this holy flower.

Could Persia's 'bdellium purchase earth
And purchase all the skies,
Compared to this 'twere nothing worth—
This pearl of nameless price.
Religion, prized of God, and pure,
Is the sacred, sainted flower.

PREMIUMS OF THE MASSACHUSETTS SOCIETY FOR THE ENCOURAGEMENT OF AGRICULTURE.—We insert the following list of Premiums, not only as a matter of interest to our readers, but as a specimen of the rewards which should be given by similar associations.

The Trustees of the Massachusetts Society for promoting Agriculture believe that the interest of agriculture will be better promoted by appropriating all the money at their disposal, for premiums for the encouragement of *well cultivated farms, the operations of the dairy, a thorough field culture* of vegetable and grain crops, *agricultural experiments, discoveries, and inventions, for trees and live hedges*, than by distributing any portion of it to the objects usually exhibited at the Cattle Show in Brighton, and trust that they shall be justified in omitting the show for the present year. They hope the omission will not in any degree relax the energies of agriculturists, but awaken their attention, and stimulate them to raising prime cattle for labor, and for the dairy, and the general improvement of other animals, that the cattle show in 1835 may exhibit a greater degree of excellence than in former years, in the selection and preference for the best stocks.

In conformity with these views, the Trustees have concluded not to have a Cattle Show at Brighton, this autumn, but propose to have an Exhibition of Butter and Cheese, at a place to be designated hereafter by the Trustees, on Wednesday, the third day of December next.

The following premiums are offered:

For Butter and Cheese exhibited, without regard to the place of manufacture.

For best lot of butter in tubs, pots or firkins, not less than 300 lbs., $100.

For the next best, not less than 300 lbs. $50.

For the best, less than 300 lbs. and not less than 100 lbs., $30.

For the next best, less than 300 lbs., and not less than 50 lbs., $20.

For the best, less than 100 lbs. and not less than 50 lbs., $15.

For the next best, less than 100 lbs. and not less than 50 lbs., $10.

For the best lot of cheese, not less than one year old, and not less in quantity than 300 lbs., $50.

For the next best, not less than one year old, and not less in quantity than 300 lbs.. $30.

For the best cheese, less than one year old, and not less in quantity than 300 lbs., $50.

For the next best, of not less quantity, $30.

The claimant for the several premiums on butter to be exhibited in the month of December next, must state, in writing, the following particulars, viz.: the number of cows kept on his farm; the mode of keeping; the treatment of the milk and cream before churning; the mode of churning, winter and summer; the measures adopted to express the buttermilk; the quantity and sort of salt employed; whether saltpetre or any other substances have been used in the process; the best time for churning and keeping butter in hot weather, and the best mode of preserving it, in and through the summer and winter, and in what vessels.

The claimants for the several premiums on cheese must state the mode of making the same, and the following particulars, viz.: the number of cows kept; whether the cheese is made from the proceeds of one, two, or more milkings; whether any addition is made of cream; the quantity and sort of salt used, and the quantity of rennet; the mode of pressure, and the treatment of the cheese afterwards.

Farmers in the several States are invited to compete for these premiums.

Claims for the premiums on butter and cheese must be made in writing, addressed to Benjamin Guild, Esq., Boston, post paid, on or before the 2d of December next; and the parcels deposited before Wednesday the 3d, at a place to be designated hereafter by the Trustees, on which day, at 10 o'clock, before noon, the Committee will proceed to examine the lots offered for premium, and none will be admitted after that hour.

The premiums will be awarded at the same place on Thursday the 4th.

Each lot must be marked with the initials of the owner's name, and the place of manufacture.

It is particularly recommended to the competitors, that the butter be put up in the nicest manner.

And to take notice, that there will be a public auction after the examination by the Committee, and those who desire to sell will have an opportunity without any charge for auctioneer's fees, but the government duty must be paid by the owners of the butter and cheese. The Committee will be at liberty to withhold from the auction sale any parcels, either of butter or cheese, which they may have reason to suppose, from the ordinary quality of the same, or other circumstances, may have been sent merely for sale.

Mr. Edmund T. Hastings, No. 37 Commercial street, has very liberally offered the use of his spacious apartments, for those gentlemen competitors who wish their butter and cheese sent to Boston before the public hall is prepared to receive them.

The best cultivated Farms.

For the best cultivated farm, $150.

For the next best cultivated farm, $100.

The farm to consist of not less than seventy acres, exclusive of woodland. The owner or tenant, to entitle himself to either of the premiums, must state in writing the nature and quality of the soil, the proportions suitable for tillage, mowing and pasturing, respectively, and especially the quantity of irrigated meadow or low land, which is never tilled or ploughed, with as much particularity as he is able.

The number of acres planted the present year with corn, potatoes, and other vegetables.

The number sowed with winter and spring grains, and other vegetables, specifying the several kinds, and the number of acres planted or sown with each.

The quantity and kind of manure used for each crop, and the times and manner of applying it. The quantity and quality of each crop.

The number of acres mowed the present year, what proportion upland, what meadow or land that had never been ploughed, the kind of grass and quantity of hay, according to the best of his knowledge, judgment, and belief.

His manner of dressing and manuring his meadow or mowing, and laying down his tilled land to grass, the kinds of grass seed, the quantity of each, the time of year it is sown, and whether with oats, barley, or other grain, or alone.

The number of acres of pasture—what proportion is in natural grass, and what proportion has been ploughed, and with what kinds of grass seed, and what quantity per acre, it was laid down; and whether it was sown with grain, and what grain, or alone, and at what time.

The number of apple trees on the farm; the proportion grafted; whether planted in orchards or partly by the fences against the road; the quantity of winter apples gathered and cider made; treatment of trees; and manner of making cider.

The form and dimensions of barn, sheds, and barn-yard, and manner of collecting and making manure.

The number of oxen, cows, and young stock, horses, and sheep, kept on the farm through the year; and the quantity of butter and cheese made, distinguishing the new milk from the other cheese, and the breed of cows, whether foreign, mixed, or native.

The number of swine, and the quantity of pork made.

The labor employed in carrying on the farm, and the quantity of ardent spirits consumed.

As it is deemed important to ascertain the best rotation of crops, it is expected that the applicants for these premiums will state the kind of crop, if not able to state the quantity,

raised on the several and respective pieces of tillage, mowing, and pasture land described in their statements, for two years next preceding the present one.

The manner of feeding his stock in winter season; whether he gives his milch cows, or oxen, grain or roots of any kind, and the kind and quantity.

His treatment of calves he intends to raise; whether he lets them continue to suck, or weans them soon after born; how soon; what food he gives them, and how long he continues to feed them.

If it be a sheep farm, the manner he treats his sheep in the winter; whether they are housed, or left out in the yard; the food given them; and the time they generally lamb.

The Trustees think that the utility of this premium materially depends on the particulars above mentioned being stated, with as much exactness as the nature of the business will admit: they do not, however, expect that the mowing, pasturage, or tillage land, should be actually surveyed, and the hay weighed; but only that the applicant should ascertain the quantities with as great accuracy as he can without, and state them according to his best judgment and belief. They think it proper further to observe, that while they expect a substantial compliance with the terms above specified, an omission, or want of exactness in some of the less important particulars, will not preclude an applicant from the premium, if, on the whole, his farm shall appear to be so well cultivated as otherwise to entitle him to it.

The whole statement to be sworn to by the applicant. The Trustees to be at liberty, in all cases, before they award the premium, to visit, by a committee, or such other persons as they may appoint, the farms of the applicants, if they deem it expedient.

N. B.—Claims to be addressed to Benjamin Guild, Esq., in Boston, (post paid,) before the first day of November next; and the evidence to support them to be sent as above, on or before the first day of January, 1835.

Vegetable and Grain Crops.

For the greatest quantity of carrots on an acre, not less than 600 bushels, $20.

For the greatest quantity of ditto on half an acre, not less than 300 bushels, $10.

For the greatest quantity of potatoes on an acre, not less than 500 bushels, $20.

For the greatest quantity of ditto on half an acre, not less than 250 bushels, $10.

For the greatest quantity of common beets on an acre, not less than 600 bushels, $20.

For the greatest quantity of ditto on half an acre, not less than 300 bushels, $10.

For the greatest quantity of mangel wurtzel, or scarcity root, on an acre, not less than 600 bushels, $20.

For the greatest quantity of ditto on half an acre, not less than 300 bushels, $10.

For the greatest quantity of sugar beets on an acre, not less than 600 bushels, $20.

For the greatest quantity of ditto on half an an acre, not less than 300 bushels, $10.

For the greatest quantity of parsnips on an acre, not less than 400 bushels, $20.

For the greatest quantity of ditto on half an acre, not less than 200 bushels, $10.

For the greatest quantity of ruta baga on an acre, not less than 600 bushels, $20

For the greatest quantity of ditto on half an acre, not less than 300 bushels, $10.

For the greatest quantity of common turnips on an acre, not less than 600 bushels, $20.

For the greatest quantity of ditto on half an acre, not less than 300 bushels, $10.

For the greatest quantity of onions on an acre, not less than 600 bushels, $20.

For the greatest quantity of ditto on half an acre, not less than 300 bushels, $10.

For the greatest quantity of cabbages on an acre, not less than 25 tons weight, free from earth when weighed, $20.

For the greatest quantity of ditto on half an acre, not less than 13 tons, $10.

For the greatest quantity of vegetables, (grain, peas, and beans excepted,) for home consumption and not for sale; raised for the keeping of stock, regard being had to the size of the farm in proportion to the crop, and to the number of the stock kept; and also to the respective value of the vegetables as food, and the expense of raising the same, $30.

For the greatest quantity of Indian corn on an acre, not less than 100 bushels, $20.

For the greatest quantity of winter wheat on an acre, not less than 30 bushels, $20.

For the greatest quantity of barley on an acre, not less than 45 bushels, $20.

For the greatest quantity of rye on an acre, not less than 30 bushels, $20.

For the greatest quantity of millet on an acre, cut and cured for hay, not less than 3 tons; the claimant giving evidence of the time of sowing, the quantity of seed sown, and the quantity of hay produced, $20.

For the greatest quantity of dry peas on an acre, not less than 30 bushels, $20.

For the greatest quantity of dry beans on an acre, not less than 30 bushels, $20.

For the greatest quantity of mustard seed, not less than 20 bushels, $20.

For the greatest quantity of dressed flax, not less than 500 lbs. from an acre, $20.

For the greatest quantity and best quality of hemp on an acre, $40.

It is to be understood that the quantity of land specified above is, in each case, to be in one piece. And the claimant of any of the above premiums shall, with one other person, make oath to the following particulars before some Justice of the Peace, and, with a certificate of the same, shall obtain a certificate of the measurement of the land by some sworn surveyor.

The particulars are—

1. The condition of the land in the spring of 1834.

2. The product, and general state of cultivation and quality of manure used upon it the preceding year.

3. The quantity of manure the present season.

4. The quantity of seed used, and, if potatoes, the sort.

5. The time and manner of sowing, weeding, and harvesting the crop, and the amount of the product ascertained by actual measurement, after the whole produce for which a premium is claimed is harvested, and the entire expense of cultivation.

6. Of Indian corn, the entire crop of the acre to be offered for premium is to be shelled and measured in the presence of the claimant, who is to make oath to the truth of the statement made by the person or persons, who did harvest, shell, and measure it; and to be measured between the 15th of November, 1834, and the 1st day of January, 1835.

7. At least 40 bushels of the vegetables, for which a premium is claimed, (except potatoes, onions, and common turnips,) are to be weighed, and 56 pounds, free from the dirt, will be considereed as a bushel.

Experiments, Discoveries, and Inventions.

For the experiment of turning in green crops as a manure, on a tract not less than one acre, and proving its utility, giving a particular account in writing, under oath, of the process and the result, $20.

For the most successful use of the drill plough, in the cultivation of any small grains or seeds, on a scale of not less than one acre, $20.

For an effectual and satisfactory mode of destroying the beemoth, or of preventing its ravages, $20.

For an effectual and satisfactory mode of extirpating the worm that attacks the locust tree, $100.

For a new, effectual, and satisfactory mode of extirpating the borer which attacks the apple tree, $50.

For any newly invented agricultural implement, or machine, superior to any designed for the same use that shall have heretofore gained a premium, a reward not exceeding twenty dollars, according to the importance of the invention, $20.

Trees and Live Hedges.

For the greatest quantity of raw or unmanufactured silk, not less than *ten* pounds, raised by the claimant, and presented before the 1st December, 1834, $20.

For the best plantation of white oak trees, not less than one acre, nor fewer than 1000 trees per acre—raised from the acorn—not less than *three* years old, and which shall be in the most thriving state on the 1st September, 1834, $100.

For the best plantation of white ash, larch, and yellow locust trees, each of not less than one acre, nor fewer than 1000 trees per acre, to be raised from the seeds, and which trees, not less than three years old, shall be in the most flourishing state on the 1st September, 1834, $50.

For the best buckthorn hedge, not less than 100 rods, and which shall be in the most thriving state in 1834, $50.

Rules and Regulations.

Claims under the two last heads, together with the proper evidence, must be delivered to Benjamin Guild, Esq. in Boston, free of expense, on or before the first day of January, 1835.

Claims for the premiums on vegetable and gain crops, and experiments and inventions, together with the evidences required, are to be in writing, and sent, free of expense, to Benjamin Guild, Esq. in Boston, Assistant Recording Secretary, on or before the 1st day of December next, and they will be examined by the committee previous to the 7th of December.

It is understood, that whenever, merely from want of competition, any of the claimants may be considered entitled to the premium, under a literal construction, yet if, in the opinion of the judges, the object so offered is not deserving of any reward, the judges shall have a right to reject such claims. Persons to whom premiums shall be awarded may, at their option, have an article of plate, with suitable inscriptions, in lieu of the money.

In cases where pecuniary premiums are offered, the trustees may, having regard to the circumstances of the competitors, award either the Society's gold or silver medals, in lieu of the pecuniary premiums annexed to the several articles.

That if any competitor for any of the Society's premiums shall be discovered to have used any disingenuous measures, by which the objects of the Society have been defeated, such person shall not only forfeit the premium which may have been awarded to him, but be rendered incapable of being ever after a competitor for any of the Society's premiums.

Time of Paying Premiums.—The treasurer will attend on Thursday, the 4th of December, at 12 M. to pay all premiums awarded.

All premiums not demanded within six months after they shall have been awarded, shall be deemed to have been generously given to aid the funds of the Society.

By order of the Trustees,

JOHN WELLES,
JOHN HEARD,
BENJ. GUILD,
} Committee.

September 1, 1834.

REMEDY FOR VERMIN IN SHEEP.—Mr. Coke's receipt for dressing all his flocks previous to winter, was as follows: Two pounds of tobacco, two pounds and a half of soft soap, one pound of white mercury in powder; boil in eight gallons of water one hour; part the wool once down each shoulder and the breast, and twice along each side, into which pour it. This quantity is enough for forty sheep.—[Young's Annals, vol. 19th, p. 448.]

On Practical Irrigation and Draining—The Practical Irrigator and Drainer. By GEO. STEPHENS, Land Drainer, Edinburgh. Blackwood, 1834. [From the Edinburgh Quarterly Journal of Agriculture.]

When agriculture began to attract particular attention, the inferiority of wet land would soon become apparent. This inferiority would be most obvious in the temperate regions of the globe; because the effects of excessive moisture could only there be always perceptible in the soil. It was in Europe that agriculture received the first impulse towards improvement, and agriculture still flourishes in Europe in greater perfection than any other portion of the globe. To the Romans belong the honor of improving the general culture of the soil in Europe, towards which draining contributed as much, perhaps more, than any other single operation. The precepts which they have bequeathed to the world in their writings on that subject evince the observant faculties of that extraordinary people. They were fully acquainted with the method of clearing their fields of surface water, and they also understood the art of directing springs, by means of drains, to places where they could do no mischief. This art, however, appears to have been lost from the overthrow of the Roman empire to the revival of learning after the dark ages. After that period, to as lately as the middle of the eighteenth century, it had been practised in a much inferior manner to the Romans. The small drains, with a stone set on each side, and one covering them, situate between the soil and the subsoil, which modern improvements in agriculture have discovered, are very inferior structures to those described by the Romans.

It was reserved to a farmer in Warwickshire, of the name of Elkington, so lately as 1764, to introduce what may properly be called a system of draining, superior even to that of the Romans, and which, in peculiar situations, cannot be surpassed in efficacy. The leading theory of this system is, that though moisture be seen on the surface of the soil at any given place, the spring of water from which it originates lies deeply seated in some porous stratum. His practice consequently is, to discover, first, the seat of the spring, and then to cut a drain deep enough to intercept the water, and carry it away where it can do no mischief. The drain may not be able to reach the seat of the spring, though it may be properly situate in relation to it: in that case, he bores holes with iron rods, or sinks wells through the bottom of the drain to the spring, in case the quantity of water be great. The water has then liberty to rise through the bored holes and wells to the bottom of the drain, on which it flows away innoxiously.

These principles of Elkington have been, and may be, applied successfully to the draining of lakes, bogs, and morasses; of hollow portions of land containing deep soil, but much injured with water from the adjoining rising grounds; and of undulating ground subject to bursts of water. All these situations will be found to be connected with alluvial or rocky strata, of different structure and compactness; and in any situation which possesses alternate strata, of various degrees of permeability, these principles may doubtlessly be employed with unfailing success.

It is the object of Mr. Stephens, in his Practical Drainer, to enforce and illustrate these principles in every variety of situation to which they are applicable; and we may readily believe that an experience of thirty years in putting these principles to practice, in Great Britain and Sweden, has enabled him to fulfil the task which he has undertaken in a very satisfactory manner. He has consequently produced an excellent manual of draining—forming a superior guide, in our opinion, to Elkington's system, or any other book extant. For although Elkington's principles are quite simple, and may be easily understood by any one, yet, as Mr. Stephens justly observes, they are not easily put into practice. The difficulties attending their application may be evinced from the numerous examples which he has produced from his own practice in Sweden, a country seemingly peculiarly adapted to the application of those principles.

It is this simplicity in the principles of Elkington's system which has rendered their proper application successful; but we suspect that very simplicity has tempted many ignorant people to try their skill in draining. There is, unfortunately for the country, too much truth in these observations of Mr. Stephens: "To drain land effectually, and at the least expense, must surely be the desired object of those who engage in it; but how can they ever expect to attain this, if the work is executed without any consideration of the cause from which the wetness proceeds, as is too often the practice in this country. Thus, when a field is injured by wetness, no matter from whence it comes, all that is thought necessary to dry it is to make drains straight to the wettest place, and through the hollowest part of it; and if these have not the desired effect, others are added, and the work-people are bound to make them a fixed depth, and, after cutting and carving in all directions, the land is partially dried, and in some instances completely, but at three times the expense it would have been if they had been properly directed. The person engaged in this arduous undertaking believes himself a complete drainer, and tells his master that there is no occasion for employing a professional man to lay off the drains, for he can do it as well as any man, and at half the expense; the master believes him, and being glad that he has such a clever person in his employment, gives orders to commence operations, which are carried on for two or three years, when, after having spent a considerable sum of money to little or no purpose, a professional man has been sent for to investigate the cause of the bad success, and provide a remedy, which has generally to be a complete renewal of the operations upon other principles." After this faithful picture of a circumstance of frequent occurrence, no one will be astonished to learn that "more money has been thrown away in attempting to drain, than in any other branch of husbandry." The chief cause of the misapplication of Elkington's principle is an ignorance of geology; and it is no uncharitableness to say, that the largest portion of the men who manage land in this country are ignorant of the structure of the crust of the earth. "There are few agriculturists, or people," says Mr. Stephens, "employed in draining land, that pay proper attention to the stratification of the earth, to which, and the want of a knowledge of hydraulics, may chiefly be ascribed the many mistakes which happen. The stratification of many districts, more especially in North Britain, is so much broken by volcanic or some other eruptions, that a person unaccustomed to the investigation of the causes from which wetness in land proceeds, has very little chance of discovering it, or of drying the land, without a much greater number of drains than is necessary." Whether it is that such suspicions of the ability of their tenants, or whether they conceive all improvements in land ought to be conducted by tenants who are immediately interested in them, that landlords in general are averse to assist their tenants in draining land, we know not; but it is an indubitable fact, that the latter do not receive the assistance from the former which they are entitled to expect while prosecuting durable improvements. There is short-sightedness in such conduct, for only great and lasting improvements in land can enable tenants to pay great and lasting rents. "If landed proprietors," says Mr. Stephens, "were alive to their own interest, they would assist their tenants, to any reasonable extent, in draining on the best principles, and in the most substantial manner; for, when properly executed, it is equally as advantageous to the proprietor as to the tenant; and it must be of the highest importance that the interest of both parties should be combined, by performing the work in a complete and permanent manner, as land that is imperfectly drained can never produce crops, either in quantity or quality, equal to land that has been properly dried."

From these general remarks, the spirit of which should actuate every drainer, we should turn to an examination of the practice which he should execute; but we do not mean to follow Mr. Stephens through all his remarks on draining bogs and marshes, hilly and sloping grounds; clay lands injured by subterraneous water; soils composed of alternate beds of clay and sand ridges; and clay-soil injured by surface water; nor on the mode of forming open, shoulder, covered, rumbling, and tile drains. It is enough that we inform the person who intends to drain his land on sound principles and in a substantial manner, that he will find the most valuable directions for his guidance in Mr. Stephens' book. The author's practice as a drainer is amply and satisfactorily illustrated by a report which was drawn up by the Right Rev. and Hon. Charles Von Rosenstein, Archbishop of Sweden, at the request of the "Royal Nerician Agricultural Society at Orebro," of many important drainings, undertaken by Mr. Stephens in Sweden.

On the subject of straitening water-courses and protecting river banks, Mr. Stephens truly says, "A river is the most unfortunate boundary line of an estate, unless where the water is unfordable;" and "a river or a rapid stream, which is liable to high floods, is continually making devastations." Pleasant as it is to live by the side of flowing river or murmuring rill, it annoys not unfrequently by trespassing on cornfi elds and grassy haughs. Nobody can have yet forgotten the floods in Morayshire in 1829. In that year the Isla in Strathmore destroyed £9000 worth of ripe corn; and the Till in Northumberland every year threatens a predatory incursion. To confine river floods within bounds by embankments, to preserve the banks of rivers by sheathing them with small stones, and to facilitate the motion of water by straightening water-courses, are preventive and preservative operations generally too much neglected. Mr. Stephens has given very judicious directions for performing these operations in an economical manner, founded on scientific principles. Embankments are now the more necessary that draining has facilitated the rapid passage of water from the land, whereby rivers are suddenly swollen.

The other subject which occupies Mr. Stephens' book is irrigation. Irrigation, though apparently opposite in means, is similar in effect to draining—both render the fertilization of land easy. The universal effect of *flowing* water over the surface of the ground is the promotion of healthy vegetation. Whether it is effected by the natural inundation of the Ganges and the Nile, or the artificial inundation of the plains of Lombardy, by the Tagliamento and the Po, the promotion of vegetation is striking. Irrigation is an attempt of art to imitate the beneficence of nature, and to extend that beneficence over a larger portion of the globe than nature seems disposed to do. Flowing water, in whatever state, refreshes, invigorates, and renders natural herbage finer—stagnant water destroys it, and leaves a rank and unwholesome vegetation in its stead.

As Mr. Stephens' views of irrigation have been before the public for some years, we shall not enter on the subject at present. We refer with commendation to his directions for the formation of water meadows, and of catch-work irrigation; and the management of water during the process of irrigation, which is a nice operation, and must be carefully attended to, to secure its benefits; and he illustrates his position by a reference to many water-meadows in Scotland, which have been formed under his own direction.

We shall only give one extract on the advantages to be derived from irrigation. "The crops on water-meadows," says Mr. Stephens,

"are produced at the least expense, and with the greatest certainty of an early return. On water-meadows that are well managed the grass is the earliest, and of a superior quality, well adapted to the feeding of ewes and lambs; and the hay, when properly made, is equal to the best clover-hay, and superior to any other kind for milch cows. When the herbage of dry porous soils is impoverished for the want of moisture, and the rich spongy land, by its remaining too long stagnant, both of these evils are remedied. Another great advantage attending irrigation is the extra supply of manure it yields to the arable part of a farm, especially when the lands are lying (which is often the case) at so great a distance that it is almost impossible to procure it for money. The success of improving land by irrigation perfectly warrants an experiment in the most unfavorable situation. The result will invariably triumph over every prejudice."

We have reversed the order of the subjects in the book, and wish the author had done the same, and placed draining in the foremost rank, as, without previous judicious draining, irrigation would be of little avail. Upon the whole, we have no hesitation in expressing our opinion that Mr. Stephens' treatise is the best practical manual, in every respect, of the several subjects of draining, irrigation, and the embankment of rivers, of which it treats, that we have met with.

Subsoil Ploughing.—From an article on Thorough Drainage and Deep Ploughing, in Messrs. Drummond's Report of the Exhibition at Stirling, we make the following extract, to which we invite the special attention of farmers.

The *subsoil plough*, as exhibited at Messrs. Drummond's, has been constructed on principles appearing the best fitted to break up the subsoil completely, to a depth sufficient for most thorough cultivation, say 14 to 16 inches, allowing the *active soil* still to remain on the surface—to be of the easiest possible draught, in reference to the depth of furrow and firmness of the subsoil—to have strength and massive weight sufficient to penetrate the hardest stratum, to resist the shocks from fast stones, and to throw out all stones under 200 lbs. in weight. All this has been accomplished, and practically proved, over an extent of at least 200 acres of various soils. This plough requires four good horses, an active ploughman, and a lad to drive the horses and manage them at the turnings. Six horses, yoked three and three abreast, may be necessary in some very stiff or stony soils. A common plough, drawn by a pair, goes before the subsoil plough, throwing out a large open furrow of the *active soil*. The subsoil plough following, stirs up thoroughly and breaks the bottom, when the next furrow of active soil is thrown over it; the stones brought to the surface by the subsoil plough being thrown aside on the ploughed part of the land, by a boy or lad; and so on till the whole field is gone over. The boy should carry a bag of wooden pins, that he may mark the site of the large fast stones which the plough cannot throw out, and which must afterwards be dug out with the pick, and perhaps blasted. This large plough is a sort of *horse pick*, breaking up without raising to the surface the subsoil. Channels are thus regularly formed for the water to flow from all parts towards the drains. The atmospheric air being also by this means freely admitted to the subsoil, the most sterile and obdurate, till it becomes gradually meliorated, and the common plough may ever after be wrought to a depth of from fourteen to sixteen inches without obstruction, and with the power of three horses yoked abreast, and managed with ease by the ploughman without any person to drive: being thus yoked together, and near the point of resistance, the horses have great power. The furrow turned over being broad in proportion, nearly as much ground will be gone over in a day as with a plough and a half drawn by a pair of horses. The cost of subsoil ploughing an acre may be estimated at 30s., being one-sixth of what a similar depth with the spade would cost, and, upon the whole, as effectually done. A subsoil plough with apparatus will cost from £7 to £8.

The effect of this mode of draining and deep working on close bottomed land is quite wonderful. After one turn of green cropping, with the usual application of lime and dung, the formerly scanty sterile surface soil becomes a deep rich loam, carrying without fail crops of wheat and barley, producing from 9 to 12 bolls per acre of wheat, and from 8 to 12 of barley—the hay and pasture following being very fine. When fields have been thus dried and worked, it is recommended to plough them at all times without ridges, or water furrows, preserving one uniform sheet of soil over the whole field. By this means every superficial inch is allowed to be productive. There is no running off of the surface by accumulated currents of water, and the water falling as rain is left to percolate through the soil where it falls, thereby uniformly enriching the whole extent. There is a powerful process of nature much facilitated by complete draining and deep working, the constant circulation of air to and from the bottom of the soil, produced by the constantly varying relative temperatures of the atmosphere and the earth. When heavy rain falls, the air is completely expelled from the interstices of the soil, the water taking its place. Also, when the rain has ceased to fall, the water gradually subsides to the level of the drains, or, at all events, to the level of the bottom of the subsoil that has been moved by the plough, and fresh air takes its place throughout the soil, thereby promoting doubly a chemical action vastly conducive to the decomposition of the soil and the manure it contains, and, of course, to the nourishment of plants.

Horse Selling—Warranty.—"In the purchase of horses," says the American Farrier, "the buyer usually receives, embodied in the receipt, what is termed a *warranty*. It should be thus expressed:

'Received of A. B. one hundred dollars for a grey mare, warranted only five years old, sound, free from vice, and quiet to ride and drive.

$100. C. D.'"

A receipt including merely the word "warranted," extends only to soundness; "warranted sound" extends no further; the age, freedom from vice, and quietness to ride and drive, should be especially named. This warranty extends to every cause of unsoundness that can be detected, or that lurks in the constitution at the time of sale, and to every vicious habit which the animal has hitherto shown. To establish a breach of the warranty, and to be enabled to return the horse or recover the price, the purchaser must prove that it was unsound or viciously disposed at the time of sale. In case of cough, the horse must have been heard to cough previous to the purchase. Coughing, even on the following morning, will not be sufficient; for it is possible that he might have caught cold by change of stabling. If he is lame, it must be proved to arise from a cause that could not have occurred after the animal was in the purchaser's possession. No price will imply a warranty, or be equivalent to one; there must be an express warranty. The warranty should be given at the time of sale. A warranty, or a promise to warrant a horse, given at any period antecedent to the sale, is invalid; for the horse is a very perishable commodity, and his constitution and his usefulness may undergo a considerable change in a few days.

If the horse should be afterwards discovered to have been unsound at the time of warranty, the buyer may return him.

When a horse is returned, and an action brought for the price, it will be indispensable that in every other respect, except the alleged unsoundness, the animal shall be as perfect and valuable as when bought.

The purchaser, possibly, may like the horse notwithstanding his discovered defect, and he may retain and bring his action for the depreciation in value on account of the unsoundness. Few, however, will do this, because the detention of the horse will cause a suspicion that the defect was of no great consequence, and will give rise to much cavil about the quantum of damages, and, after all, very slight damages will probably be obtained.

Where there is no warranty, an action may be brought on the ground of fraud, but this is very difficult to be maintained, and few possibly will hazard it. It will be necessary to prove that the dealer knew the defect, and that the purchaser was imposed upon by his false representation; and that, too, in a case in which a person of ordinary circumspection might have been imposed upon. If the defect was evident to every eye, the purchaser has no remedy—he should have taken more care; but if a warranty was given, it extends to all unsoundness, palpable or concealed. Although a person should ignorantly or carelessly buy a blind horse, warranted sound, he may return it—the warranty is his guard, and prevents him from so closely examining the horse as he otherwise would have done; but if he buys a blind horse, thinking him to be sound, and without a warranty, he has no remedy. The law supposes every one to exercise common circumspection and common sense.

A man should have a more perfect knowledge of horses than falls to the lot of most men, and a perfect knowledge of the vender too, who ventures to buy a horse without a warranty.

Exchanges, whether of one horse absolutely for another, or a sum of money being paid in addition by one of the parties, stand on the same ground as simple sales. If there is a warranty on either side, and that is broken, the exchange is vitiated; if there be no warranty, deceit must be proved.

The subject of trial is a very intricate one, and we are inclined to think that the dealer is often very ill-used. It is well known that a horse from a dealer's stable is seldom or never fit for hard work until he has undergone some preparation and training. It is right that the purchaser should have a trial of him, but he should try him in a fair way—in a way consistent with the state in which the animal is. If a horse from a dealer's stable is galloped far and fast, it is probable that he will soon show distress; and if he is pushed farther, inflammation and death may ensue. The dealer rarely gets recompensed for this; and if it should occur soon after the sale, the horse is returned, or an action is brought for its price. —[Ohio Farmer.]

"To make a Minute Pudding.—Stir flour into boiling milk, the consistence of a thin hasty pudding, and in 15 or 20 minutes it will be fit for the table. Serve with sauce to suit the taste."—[Cultivator.]

Mr. Medary,—I should call this a 20 minute pudding—I have seen many made in this way, but never saw a good one.

Hang over your tea kettle; let it boil briskly; while it is heating, put your flour in a basin; wet it as you would do starch with cold water; then pour on your boiling water, keeping the flour stirring while the hot water is going on; in one minute it will be fit for the table, tender, transparent, and sweet. Too much water should not be put on or it will be too thin; just enough to cook the flour.

A Housekeeper.

August 31, 1834.

P. S.—This pudding may be made of rye, wheat, or buckwheat flour; the batter of buckwheat cakes, if boiling water be poured on as above, will make a minute pudding.—[Ohio Farmer.]

SUMMER'S GONE.

BY MRS. NORTON.

Hark, through the dim woods dying,
With a moan,
Faintly the winds are sighing—
Summer's gone!
There, when my bruised heart feeleth,
And the pale moon her face revealeth,
Darkly my footsteps stealeth,
To weep alone.
Hour after hour I wander,
By men unseen—
And sadly my wrung thoughts ponder,
On what hath been,
Summer's gone!

There in our green bowers,
Long ago—
Our path through the tangled flowers
Treading slow;
Oft hand in hand entwining—
Oft side by side reclining—
We've watched its crimson shining,
The sunset glow.
Dimly the sun now burneth
For me alone—
Spring after spring returneth,
Thou art gone,
Summer's gone!

Still on my warm cheek playeth
The restless breeze—
Still in its freshness strayeth
Between the trees!
Still the blue streamlet gusheth—
Still the broad river rusheth—
Still the calm silence husheth
The heart's disease:
But who shall bring our meetings
Back again?
What shall recall *thy* greetings—
Loved in vain!
Summer's gone!

PRESERVING BREAD MOIST.—*Mr. Fleet:* The other day I saw a lady on taking her bread out of the oven wash her loaves with cold water. I inquired the reasons. She said there were two objects in doing it—one to wash off the ashes and coals that might adhere, and the other to keep the bread from becoming too dry and hard. After washing the loaves moderately, she put them in a barrel and covered them closely with a clean cloth. L. T.

SUGAR AND GLUTEN.—"There are few plants that do not contain sugar, which chemists have shown to be composed of about three parts carbon, four parts oxygen, and eight parts of hydrogen."—[N. Y. Farmer for May, page 138.]

Mr. Fleet: I took a table-spoon full of brown sugar, put it in a spider and set it over the fire. In a few minutes it swelled up, and nearly the same bulk of charcoal was found in the spider. I wonder if there is any carbon in sugar, or whether Professor Rennie is correct in supposing it to be composed of three parts carbon, four parts oxygen, and eight parts hydrogen; but as Professor Rennie is a modern writer, I suppose he has examined the subject.

Yours, RATIO.

June 27th, 1834.

IRISH POTATOES AS FOOD FOR SHEEP.—In conversation with a gentleman (who has travelled about a good deal) some weeks since, about managing and raising stock, &c., he told me in travelling in the western part of this state, or in Ohio, some years since, he stopped at an old Quaker's house to stay all night; and while there, he saw some one about the establishment chopping up Irish potatoes, to about the size of partridge eggs. He inquired what the chopping mass was intended for: the Quaker replied, "It is for my sheep: with chopped potatoes and a small quantity of hay, I can keep a flock of sheep fatter and in better health than any other way I have ever tried or seen tried."

The gentleman says he saw the flock of sheep before he left, and finer fatter looking sheep he never saw. PHILIP.—[Farmers' Register.]

ON SUGAR REFINING IN FRANCE.—As it is universally known that sirops are injured and decomposed by being too long exposed to an intense heat, various means have been tried to avoid the loss thereby incurred.

The methods which have met with most approbation are, 1st, the system of evaporating by steam; 2d, the system of evaporating *in vacuo*. Both are decided improvements on the process of evaporating on the naked fire.

But through the agency of steam, the sirops can be granulated only when raised to the temperature of 237° to 240° Fahr.; and when heated to that pitch, a material portion of the sirop is still decomposed.

The granulating *in vacuo* is attended with inconveniences of another kind. That system requires a great supply of water, expensive and complicated machinery, very liable to get out of order; besides, the operation takes place in closed and air-tight vessels, and the refiner cannot keep his eye upon it to direct it properly.

Some refiners have tried the use of atmospheric air to facilitate evaporation, but they have been obliged to renounce a scheme which they could not realize.

The art of sugar refining was, then, very far from perfection in France, when an invention, ingenious in its application, great in its results, and remarkable by its success which daily increases, produced a complete revolution in that branch of industry.

A refiner of Lisle, Mr. Brame Chevalier, struck with the idea of using simultaneously steam for raising the sirop to the proper degree of heat, and air, heated by the same steam, to maintain the sirop in a continual agitation, conceived the possibility of obtaining by this means a very rapid and extensive evaporation at a very low temperature, thereby preserving the sirop from decomposition, and procuring a great economy of fuel and labor, and also greater returns in sugar.

This very ingenious theory has been most successfully realized. Nothing can be more perfect nor better contrived than the apparatus by which these results have been obtained.

A generator supplies the steam required to work a pump, which drives the air into a cylinder; there the steam heats the air to a proper degree; the heated air is then driven under the false bottom of a boiling pan, heated itself by steam, and escapes by small apertures through the sirop, which it causes to boil immediately.

The surplus of steam and heated air is used for warming the stove and store rooms, so that every operation of sugar refining, even that of clarifying, may be made with one boiler and one machine without the slightest danger of fire.

The boiling takes place in an instant, and as soon as the hot-air cock is opened. Evaporation takes place at 134° Fahr.; granulation is effected in eight minutes between 178° and 196° Fahr.

Martinique sugars, of the fourth quality, worked in this machine, do not produce more than six per cent. treacle, and fourteen per cent. of pale brown sugar, called in France, *Vergeoise*.

But great and important as this system is for sugar refiners, it is still more beneficial to sugar manufacturers, who extract the sugar from the beet root or the cane. It is easily conceived, as the saccharine juices, which do not weigh more than *ten* degrees, must be exposed much longer to the fire than the sirops proceeding from the melted sugar, which weigh generally thirty degrees. Moreover, by blowing hot air through the juices, they are purified of any unpleasant taste they may have acquired.

Finally, the advantages which account for the decided preference obtained by the system of Mr. Brame Chevalier, consist in its procuring more and finer sugar from the same quantity of raw materials of the same sort, and, moreover, in manufacturing, with greater rapidity, a superior sort of sugar.

These are positive facts, which are daily proved and verified by the great number of visiters who call at Mr. Brame Chevalier's sugar refinery at Lisle.—[Lond. Journ.]

BUTTER, seasoned with brown sugar and saltpetre, in place of common salt, is said to be much superior to that prepared in the common mode. Sixty firkins, prepared in this manner, lately commanded a considerable advance in the Waterford market.

DAYS OF THE CREATION.—Supposing that there are inhabitants at the poles of the earth, how must they understand the days of the creation? To them a day of light is six months long, and a night of darkness six months long, and the day made up of night and day covers a year, and it is a day, too, limited by morning and evening. Such persons, therefore, must suppose, upon the literal understanding of the days of the creation, that at least six years were employed upon the work. So also at the polar circles, there is every year one day that is one continued vision of the sun for 24 hours, and one continued night of 24 hours; while everywhere within the polar circles the days and the nights respectively are for six months more than 24 hours, extending even as we advance towards the poles through the time of many of our days and nights. How are the inhabitants of these regions to understand the week of the creation, if limited to the literal interpretation of the inspired record?—[Professor Silliman.]

THE PENGUIN.—At a recent meeting of the Zoological Society, Mr. G. Bennett read a note on the habits of the *King Penguin, Aptenodytes Patachonica*, Gmel., as observed by him on various occasions when in high southern latitudes. He described particularly a colony of these birds, which covers an extent of thirty or forty acres, at the north end of Macquarrie Island, in the South Pacific Ocean. The number of penguins collected together in this spot is immense, but it would be almost impossible to guess at it with any near approach to truth, as during the whole of the day and night 30,000 or 40,000 of them are continually landing, and an equal number going to sea. They are arranged, when on shore, in as compact manner, and in as regular ranks, as an army of soldiers; and are classed with the greatest order, the young birds being in one situation, the moulting birds in another, the sitting hens in a third, the clean birds in a fourth, &c.; and so strictly do birds in similar condition congregate, that should a bird that is moulting intrude itself among those which are clean, it is immediately ejected from among them. The females hatch the eggs by keeping them close between their thighs; and if approached during the time of incubation, move away, carrying the eggs with them. At this time the male birds go to sea, and bring home food for it; it soon becomes so fat as scarcely to be able to walk, the old birds getting very thin. They sit quite upright in their roosting places, and walk in the erect position until they arrive at the beach, when they throw themselves on their breasts, in order to encounter the very heavy sea met with at their landing place. Although the appearance of the penguins generally indicates the neighborhood, Mr. G. Bennett cited several instances of their occurrence at a considerable distance from any known land.

THE MANATI, or sea-cow, from ten to sixteen feet in length, has a head something like a bull-dog, nostrils semi-lunar, and eyes very small and near the snout; it is without ears in outward appearance, but has two small spiracula situated at the back part of the head; mouth large, with soft and protracted lips, fitted for laying hold of the grass or herbage growing near the shore; neck short, and body covered with a rough blackish skin, thinly sprinkled with bristly hair; the belly, and sides near the tail, white. From the shoulders protrude two pectoral fins (the only fins on the animal) resembling arms, with which it supports itself in the water, and which enables the female to give suck to its young, who receives it from several porous openings or mammæ in the breast of the animal. The tail is formed like that of the whale. It is an amphibious animal, never leaving the water, but feeding upon the aquatic plants and shrubs growing on the borders of the rivers and lakes, sometimes elevating its head to munch at the bushes which overhang them. Its flesh is white and delicate, resembling veal, in appearance and taste, and particularly when dressed, and it will keep good several weeks, even in the hot climate of which it is a native, when other meat will not resist putrefaction for as many days.—[Martin's West Indies.]